ASCON TECNOLOGIC

EVERYTHING UNDER CONTROL

PROCESS CATALOGUE 2020

INDEX

INDUSTRIAL AUTOMATION 11
INDUSTRIAL CONTROLLERS 13
KM1 16
KM1W 18
KX1 20
KR1 22
KR1W 24
R38 26
TLK43 28
TLK72 30
TLK96 32
TLK94 34
C1 36
M1 38
M2 40
M3/M4 42
X1/X3 44
Q1/Q3 46
ADVANCED PROGRAMMER CONTROLLERS 49
KM3 52
KM3W 54
KM5P 56
KM5PW 58
KX3 60
KX5P 62
KX6 64
KR3 66
KRD3 68
KR5P 70
K 31/32/38/39 72
K 48/49 74
K85 76
K30 78
M5 80
X5/Q5 82
DIN RAIL MOUNTING CONTROLLERS 85
D1/D2/D3 88
K30 90

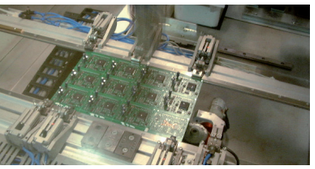
KRD3 92
K85 94
TLZ35 96
THERMOSTATS - ANALOGUE CONTROLLERS 99
Z31A 102
TLZ35 104
E51A 106
W09 108
TCPDE M 110
SPECIAL CONTROLLERS AND "CUSTOM" 113
KR7/KM7/KX7/KRD7 116
TC030 118
TLK33 120
PAC SYSTEMS 123
NP4 126
EP4 128
XP4 130
AC3NP 132
MP-D 1/2/4 134
OPENPCS 136
PRE-PROGRAMMED SYSTEMS 139
CLIMA PAC 140
BREWERY PAC 142
PLC AND OPERATOR PANELS 145
P04 148
OPMT 150
OPMT 152
P 01/30/32 154
TIMERS - COUNTERS - POWER LIMITERS 157
BWT40 160
T31 162
TT 49/73 164
TC 34/49/73 166
TP 34/49 168
INDICATORS 171
TLI40 174
K 31V /38V 176
K 48V 178
K 85V 180
J1 / J3 182
J5 184
ACQUISITION AND DATA RECORDING **187**
I/O MODULES 189
D7/D8/D9 192
ANALOGUE I/O 194
DIGITAL I/O 196
DIGITAL I/O 198
SUPERVISION 201
AUTOLINK 204
DX/DY 206
EMISSION ANALYSIS AND COMBUSTION CONTROL SYSTEMS **209**
Z02-3 212
OXI/OXM/OXR 214
ZC0 216
ACCESSORIES **219**
ACCESSORIES 221
A01 222
A30 224
APS2 ALDR 226
APS2 ATOPEH 226
APS2 MODEM 226
BOX-AR 227
CAL 227
GUAR 227
TAPP0 228
TCTR 228
TLCOV 228
TR-AMP 229
ZOC 229
THERMOELEMENTS 230

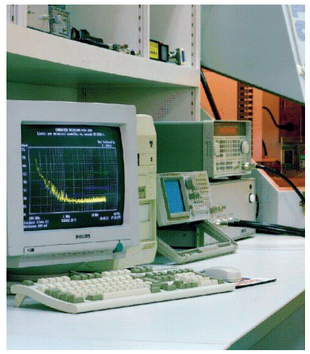
COMPANY PROFILE

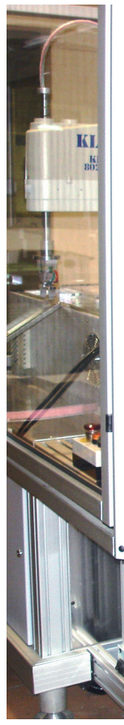
Ascon Tecnologic is an Italian company that develops, manufactures and commercializes a complete range of products for the regulation and automation of machinery and systems in the manufacturing and processing sectors as well as that of industrial and commercial refrigeration.
The group Ascon Tecnologic has more than 200 employees and, in its productive plants, realizes every year over a million of instruments.
Ascon Tecnologic operates in over 50 countries with 6 branches, its own agents and a distribution network, offering clients sales and after-sales assistance.

Manufacturing unit, Manaus (Brazil).

Headquarters, offices, R&D, Manufacturing unit, Vigevano (Italy).







QUALITY CERTIFICATION / SAFETY AND APPROVALS

Ascon Tecnologic S.r.l. has obtained:

– the certification of "Quality System" in conformity to UNI EN ISO 9001:2008 released by the corporate certifier DNV GL Business Assurance Italia S.r.l.

– the "Management System Certificate" in conformity to OHSAS 18001:2007 released by the corporate certifier DNV GL Business Assurance Italia S.r.l.

The instruments are developped for the use in conformity to the actual compliance, as concern the CE mark according to Directives 2006/95/CE (Low Voltage) and 2004/108/CE (EMC).
The applicable rules, according to the model, are:

SAFETY
– EN61010-1
– EN60730-1
– UL873 for use conforming as foreseen by Underwriters Laboratory Inc. (only for approved instruments).

EMC
EN61326-1

Remarks: please make reference to the documentation and the individual certifications for details of the applicable norms.

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 45001

CE

c UL us

INDUSTRIAL AUTOMATION

FLEXIBLE control

INDUSTRIAL CONTROLLERS

Evolution...cubed !

Experience and innovation are at the base of this range of products, able to answer to any demand of performances.
From the “entry level” controller with innovative “Sensitive-Touch” keyboard to the more sophisticated microprocessor based controllers with PID algorithm, in different sizes, standard and not.

New KUBE line: more and more in less space!
Pocket size, energy saving functions and advanced features.

INDUSTRIAL CONTROLLERS

FEATURES		KM1-KM1W	KX1	KR1-KR1W	R38	TLK43	TLK72	TLK96	TLK94	C1	M1	M2	M3	M4	X1	X3	Q1	Q3
Dimensions (mm)	78 x 35			•	•													
	24 x 48									•								
	48 x 48	•				•					•	•	•	•				
	48 x 96		•						•						•	•		
	72 x 72						•											
	96 x 96							•									•	•
3 dynamic colour dual LED display		•	•	•														
White+amber LED display		•		•														
Single display					•		•	•		•	•							
Dual display						•			•			•	•	•	•	•	•	•
Digit		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
"Sensitive Touch" keyboard					•													
Input	Universal input					•			•	•	•	•	•	•	•	•	•	•
	PTC-NTC				•		•	•										
	J-K	•	•	•	•		•	•										
	S						•	•										
	S-R-T	•	•	•														
	Pt100	•	•	•	•		•	•										
	ΔT PT100									•	•	•	•	•	•	•	•	•
	Pt1000	•	•	•	•	•												
	IR sensors					•			•	•	•	•	•	•	•	•	•	•
	Digital	2	2	2		1			2			1		1		3		3
	For CT					•			•			•	•	•	•	•	•	•
Relay or voltage for SSR drive outputs		4	4	4	2	4	3	2	5	3	4	3	3	4	4	4	4	4
Analogue current or voltage outputs						2			2	1	1		1	1	1	1	1	1
Measuring or Set Point retransmission									•	•	•		•	•	•	•	•	•
Power supply	12 Vac/Vdc				•													
	24 Vac/Vdc	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Control	ON/OFF and PID	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Servomotor control					•			•							•		•
RS485		•	•	•		•	•		•	•	•	•	•	•	•	•	•	•
Timer on board		•	•	•									•	•	•	•	•	•
Programmer																•		•
CE certification		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
UL approval		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•

KM1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

evolution

FEATURES

DISPLAY	KM1
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	48 x 48 mm (1/16DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

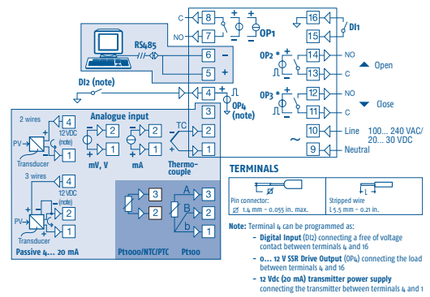
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KM1	CODE
VERSION	
Controller	-
Controller + Timer	T
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	0
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
IN/OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

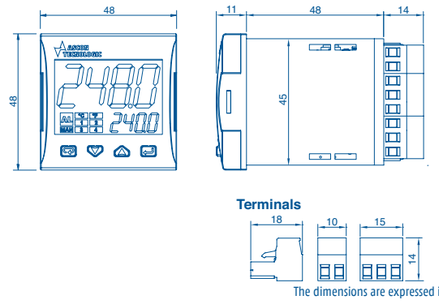
CONNECTIONS

KM1



DIMENSIONS

KM1



The dimensions are expressed in mm

KM1W

- WHITE AND AMBER LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

evolution

FEATURES

DISPLAY	KM1W
Dual LED	Main display: 4 digit h 15.5 mm. white colour Secondary display: 4 amber digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	48 x 48 mm (1/16DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

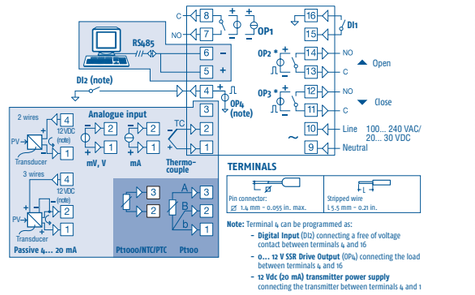
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KM1W	CODE
VERSION	
Controller	-
Controller + Timer	T
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	0
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
IN/OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

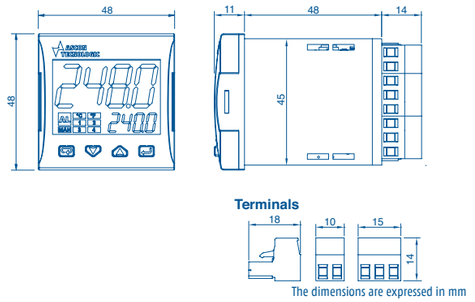
CONNECTIONS

KM1W



DIMENSIONS

KM1W



The dimensions are expressed in mm

KX1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

evolution

FEATURES

DISPLAY	KX1
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 10 mm + 20 segments Bargraph
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 76 mm / 260 g
Mounting	Flush in panel in 45 x 93 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

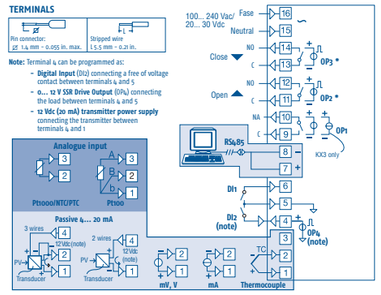
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KX1	CODE
VERSION	
Controller	-
Controller + Timer	T
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	O
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
IN/OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

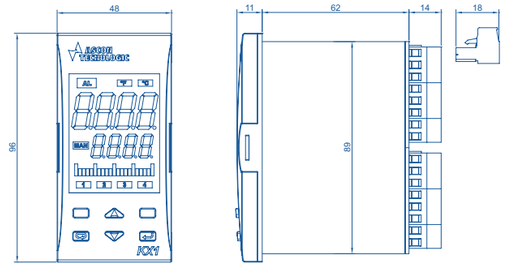
CONNECTIONS

KX1



DIMENSIONS

KX1



The dimensions are expressed in mm

KR1

- 3 DYNAMIC COLOUR LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

evolution

FEATURES

DISPLAY	KR1
Dual LED	Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	78 x 35 mm - depth 78 mm + 14 mm (plug-in terminals) / 200 g
Mounting	Flush in panel in 69 x 28 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

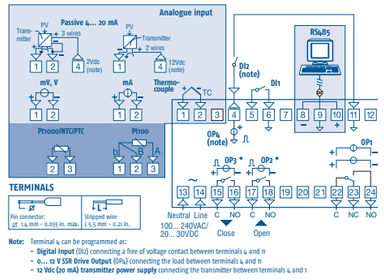
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KR1 VERSION	CODE
Controller	-
Controller + Timer	T
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	O
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

CONNECTIONS

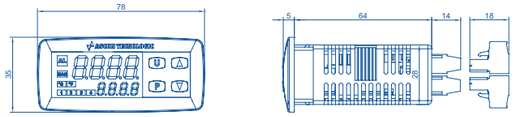
KR1



Note: Terminal 4 can be programmed as:
- **Digital input** (DI2) connecting a free of voltage contact between terminals 4 and 11
- **0... 12 V SSR Drive Output** (OP4) connecting the load between terminals 4 and 11
- **12 Vdc (20 mA) transmitter power supply** connecting the transmitter between terminals 4 and 11

DIMENSIONS

KR1



The dimensions are expressed in mm

KR1W

- WHITE AND AMBER LED DISPLAY
- INDEPENDENT TIMER
- WORKING HOURS COUNTER
- WATTMETER FUNCTION

evolution

FEATURES

DISPLAY	KR1W
Dual LED	Main display: 4 digit h 11.7 mm white colour Secondary display: 4 amber digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max.
Dimensions / Weight	78 x 35 mm - depth 78 mm + 14 mm (plug-in terminals) / 200 g
Mounting	Flush in panel in 69 x 28 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH%, without condensation
Conformity	EN 61010-1, EN 61326

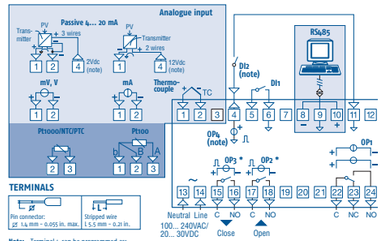
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KR1W VERSION	CODE
Controller	-
Controller + Timer	T
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	O
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

CONNECTIONS

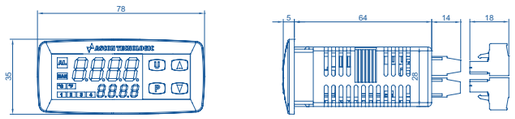
KR1W



Note: Terminal 4 can be programmed as:
- **Digital input** (DI2) connecting a free of voltage contact between terminals 4 and 11
- **0... 12 V SSR Drive Output** (OP4) connecting the load between terminals 4 and 11
- **12 Vdc (20 mA) transmitter power supply** connecting the transmitter between terminals 4 and 11

DIMENSIONS

KR1W



The dimensions are expressed in mm

R38

- "SENSITIVE TOUCH" KEYBOARD
- EASY PROGRAMMING

FEATURES

DISPLAY	R38
Single	4 red or blue digit, h 12 mm
INPUTS	
3 different configurations	Thermocouples J, K (-40... +999°C / -40... +999°F) or Infrared sensors: J or K
	Thermoresistances Pt 100 2 wires (-50.0... +850°C / -58... +999°F) autoranging
	Thermoresistances Pt 1000 2 wires (-50.0... +850°C / -58... +999°F) autoranging + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-50.0... +150°C / -58.0 a 302°F) autoranging e Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50.0... +109°C / -58.0... +228°F)
Accuracy	± 0.5% span ±1 digit@ 25°C
OUTPUTS	
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or voltage to drive SSR 20mA/12 Vdc ±20% 20 mA max.
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF single and double action, Neutral Zone, PID, programmable
PID functions	Autotuning
Sampling rate	1 sec
Serial communication	TTL ModBus
Baud rate	9600 baud
GENERAL	
Power supply	12 Vac/Vdc, 24 Vac, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm / 180 g approx.
Keyboard	Mechanical or "Sensitive Touch"
Connections	Screw terminal block 2 x 1 mm² plug-in connector or fix type
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... +50°C (32... 122°F) / -30... +70°C (-22... +158°F)
Operating humidity	20... 85 RH%, without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

HOW TO ORDER

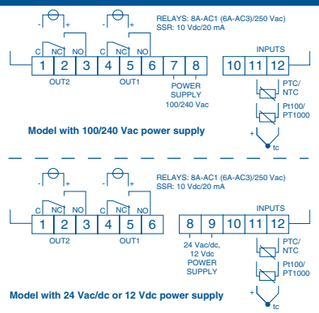
To compose the part number, pls. choose one of the option for each variable

R38	CODE
KEYBOARD	
Mechanical	-
Sensitive-Touch (*)	S
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
INPUT	
TC (J,K)	F
PT100 (2 wires only)	A
PTC/NTC/PT1000	T
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
BUZZER (INTERNAL)	
Available	B
TIPO COLLEGAMENTO	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-

(*) Capacitive Touch screen keyboard

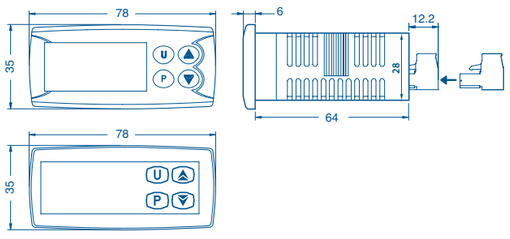
CONNECTIONS

R38



DIMENSIONS

R38



The dimensions are expressed in mm

TLK 43

- UNIVERSAL INPUT
- RS485
- UP TO 4 OUTPUTS
- CT INPUT

FEATURES

DISPLAY	TLK43
Display	Dual display: 4 red and green digit, h 7mm
INPUTS	
Universal	Thermocouples: J, K, S, B, C, E, L, N, R, T (see table next page for temperature ranges)
	Infrared sensors: J or K
	Thermoresistances: Pt100 and Pt1000 3 wires (see table next page for temperature ranges)
	Thermistors PTC KTY 81-121 (990 kΩ at 25°C) (-55... +150°C/-67... +302°F or -55.0... +150.0°C -67.0... +302.0°F) and NTC 103AT-2 (10Ω at 25°C) (-50... +110°C/-58... +230°F or -50.0... +110.0°C/-58.0... +230.0°F)
	Linear signals: 0/10... 50 mV, 0/12... 60 mV, 0/4... 20 mA, 0/1... 5 V, 0/2... 10 V
Accuracy	±0.15% fs
Current transformer (CT) input	CT 50 mA max.
Digital input	optoisolated
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO (5 A-AC1, 2 A-AC3/250 Vac) or 7 mA/14 Vdc 20 mA max. to drive SSR OUT 2, OUT 3 and OUT 4: Relay SPST-NO (3 A-AC1, 1,5 A-AC3/250 Vac) or 7 mA/14 Vdc 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.
Current (as alternative to Relay output)	OUT 1 and OUT 2: 0/4... 20 mA.
Voltage (as alternative to Relay output)	OUT 1 and OUT 2: 0/2... 10 V
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	AUTOTUNING, FAST TUNING, Selftuning
Multi Set Point	Up to 4 pre-programmable Set Point
Servomotor control	3 points
Signal retransmission	On analogue output
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	10 VA approx.
Dimensions / Weight	48 x 48 mm (1/16DIN) - depth 98 mm / 190 g approx.
Mounting	Flush in panel in 45 x 45 mm hole
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) /-25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

HOW TO ORDER

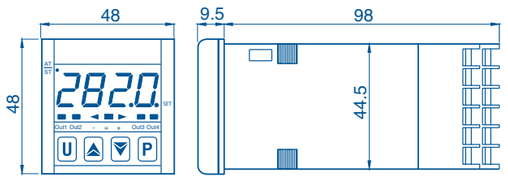
To compose the part number, pls. choose one of the option for each variable

TLK41 / TLK42 / TLK43	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
OUT 1	
Relay	R
Voltage for SSR driving	0
0/4... 20mA	C
0/2... 10V	V
OUT 2	
Relay	R
Voltage for SSR driving	0
0/4... 20mA	C
0/2... 10V	V
Not available	-
OUT 3	
Relay	R
Voltage for SSR driving	0
Not available	-
OUT 4	
Relay	R
Voltage for SSR driving	0
Not available	-
SERIAL COMMUNICATION AND DIGITAL INPUT	
RS485	S
RS485 and digital input	I
Not available	-
CURRENT TRANSFORMER INPUT	
Available	H
Not available	-

Notes:
OUT 3 and OUT 4 have to be of the same type (both R or 0).
CT INPUT: this function has to be always associated to an output (R or 0).
Analogue output and CT function are mutually exlcusive.
Digital input is always available when RS485 option is provided.
RS485 and OUT 4 are mutally exclusive.

DIMENSIONS

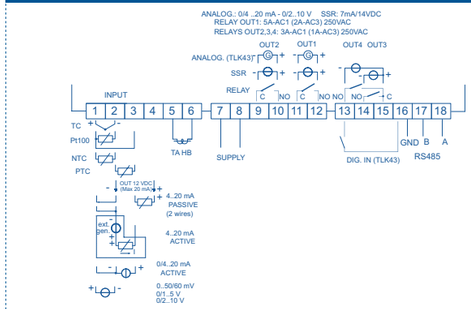
TLK43



The dimensions are expressed in mm

CONNECTIONS

TLK43



TEMPERATURE RANGES

TLK43 TEMPERATURE RANGES		
INPUT	WITHOUT D.P.	WITH D.P.
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-100 ... 1370 °C - 148 ... 2498 °F	-100.0 ... 999.9 °C -148.0 ... 999.9 °F
tc S	0 ... 1760 °C 32 ... 3200 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 750.0 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-250 ... 1300 °C -418 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-250 ... 400 °C -418 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
Ingrared sensors (ZIS)	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt1000 (IEC)	-200 ... 500 °C -328 ... 932 °F	-199.9 ... 500.0 °C -199.9 ... 932.0 °F
Pt100 (IEC)	-200 ... 850 °C -328 ... 1562 °F	-199.9 ... 850.0 °C -199.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ...302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F

TLK72

- ON/OFF AND PID CONTROLLER
- RS485
- UP TO 3 RELAY OUTPUTS

FEATURES

DISPLAY	TLK72
Single	4 red digit, h 12 mm + 3 LED Bargraph
INPUTS	
4 different configurations	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200... 850 °C/-328... 1562 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150 °C/-67... 302 °F) and Thermistors NTC 103AT-2 (10 kΩ at 25°C) (-50... 110 °C/-58... 230 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Linear signals 0/4... 20mA
	Linear signals 0/1... 5V, 0/2... 10V
Accuracy	±0.5 % fs (tc S: ± 1% fs)
OUTPUTS	
Up to 3	OUT 1 : Relay SPDT (8 A-AC1, 3 A-AC3 / 250 V AC) or voltage to drive SSR 8Vdc/8 mA OUT 2 e OUT 3: Relay SPST-NO (8 A-AC1 3A-AC3/250 Vac) or voltage to drive SSR 8Vdc/8 mA
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID
PID functions	AUTOTUNING, FAST TUNING, Selftuning
Multi Set Point	Up to 4 pre-programmable Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	10 VA approx.
Dimensions / Weight	72 x 72 mm - depth 97 mm / 325 g approx.
Mounting	Flush in panel in 67 x 67 mm hole
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... +50°C (+32... +122°F) / -10... +60°C (+14... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 89/336 (EN 61326), Directive CEE BT 73/23 and 93/68 (EN 61010-1)

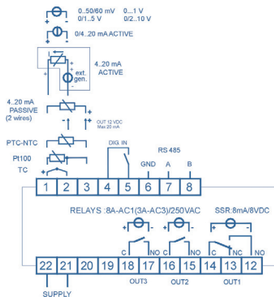
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLK72	
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC (J,K,S,IRS)+PT100,mV	C
TC (J,K,S,IRS)+PTC,NTC,mV	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
OUT 1	
Relay	R
Voltage for SSR driving	0
OUT 2	
Relay	R
Voltage for SSR driving	0
Not available	-
OUT 3	
Relay	R
Voltage for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
Not available	-
DIGITAL INPUT	
Available	I
Not available	-

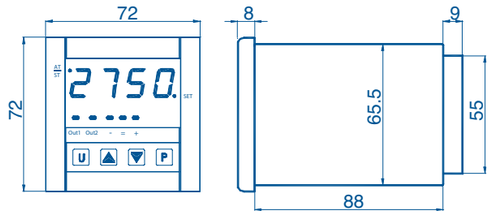
CONNECTIONS

TLK72



DIMENSIONS

TLK72



The dimensions are expressed in mm

TLK96

- ON/OFF AND PID CONTROLLER
- UP TO 2 RELAY OUTPUTS

FEATURES

DISPLAY	TLK96
Single	4 red digit, h 14 mm
INPUTS	
4 different configurations	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200... 850 °C/-328... 1562 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Thermocouples J (0... 1000 °C/ 32... 1832°F), K (0... 1370°C/32... 2498°F), S (0... 1760°C/32... 3200°F) and Infrared sensors J or K + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150 °C/-67... 302 °F) and Thermistors NTC 103AT-2 (10 kΩ at 25°C) (-50... 110 °C/-58... 230 °F) + Linear signals 0/10... 50mV, 0/12... 60mV
	Linear signals 0/4... 20mA
	Linear signals 0/1... 5V, 0/2... 10V
Accuracy	±0.5 % fs (tc S: ± 1% fs)
OUTPUTS	
Up to 2	OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 V AC) or voltage to drive SSR 8Vdc/8 mA
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID
PID functions	AUTOTUNING
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	10 VA approx.
Dimensions / Weight	96 x 96 mm (1/4 DIN) - depth 73 mm / 250 g approx.
Mounting	Flush in panel in 90 x 90 mm hole
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -10 ... 60 °C (14... 140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 89/336 (EN 61326), Directive CEE BT 73/23 and 93/68 (EN 61010-1)

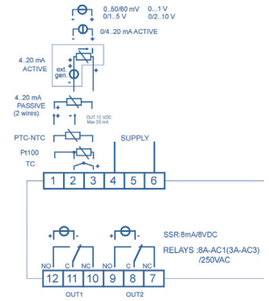
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLK96	
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC (J,K,S,IRS)+PT100,mV	C
TC (J,K,S,IRS)+PTC,NTC,mV	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
OUT 1	
Relay	R
Voltage for SSR driving	0
OUT 2	
Relay	R
Voltage for SSR driving	0
Not available	-

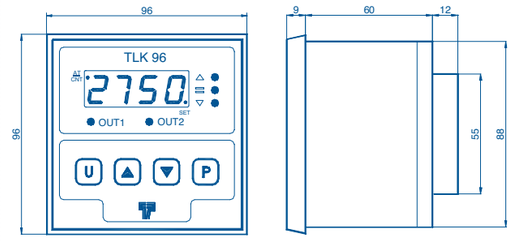
CONNECTIONS

TLK96



DIMENSIONS

TLK96



The dimensions are expressed in mm

TLK94

- UNIVERSAL INPUT
- RS485
- UP TO 5 OUTPUTS
- SERVOMOTOR CONTROL

FEATURES

DISPLAY	TLK94
Dual display	Main display: 4 red digit, h 10 mm Secondary display: 4 green digit, h 7.5 mm
INPUTS	
Universal	Thermocouples J, K, S, B, C, E, L, N, R, T and Infrared sensors J or K + Thermoresistances Pt 100 and Pt1000 3 wires + Linear signals 0/10... 50mV, 0/4... 20mA, 0/12... 60mV, 0/1... 5V, 0/2... 10V (see table next page for temperature ranges)
Accuracy	± 0.2 % fs + 1 digit; PTC/NTC: ± 0.5 % fs + 1 digit
Current transformer (CT) input	CT 50 mA max. optoisolated
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 6	OUT 1 : Relay SPST-NO (6 A-AC1, 3 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR or 0/4... 20 mA or 0/2... 10 V OUT 2: Relay SPST-NO (4 A-AC1, 2 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR or 0/4... 20 mA or 0/2... 10 V OUT 3, OUT 4, OUT 5 : Relay SPST-NO (4 A-AC1, 2 A-AC3 / 250 V AC) or 12Vdc/20 mA to drive SSR OUT6: 12Vdc/20 mA to drive SSR
Up to 4	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, PID single and double action, PID for servomotor control
PID functions	AUTOTUNING, FAST TUNING, Selftuning
Multi Set Point	Up to 4 pre-programmable Set Point
Servomotor control	3 points
Signal retransmission	On analogue output
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	10 VA approx.
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 98 mm / 260 g approx.
Mounting	Flush in panel in 45 x 92 mm hole
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -10 ... 60 °C (14... 140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

HOW TO ORDER

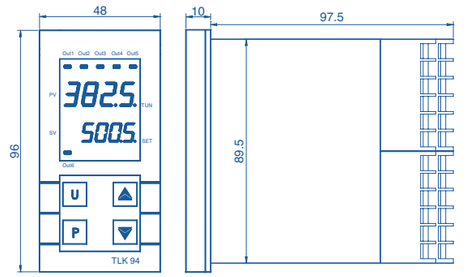
To compose the part number, pls. choose one of the option for each variable

TLK94	
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
OUT 1	
Relay SPDT 6 A-AC1	R
Voltage for SSR driving	0
0/4... 20 mA	I
0/2... 10 V	V
OUT 2	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
0/4... 20 mA	I
0/2... 10 V	V
Not available	-
OUT 3	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
OUT 4	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
OUT 5	
Relay SPST-NO 4 A-AC1	R
Voltage for SSR driving	0
Not available	-
SERIAL COMMUNICATION AND DIGITAL INPUT	
RS485	S
CT input	H
RS485 and CT input	T
Not available	-

Note : When selected OUT 3, OUT 4 and OUT 5 must be identical.
(ALL Relay or ALL voltage for SSR driving).

DIMENSIONS

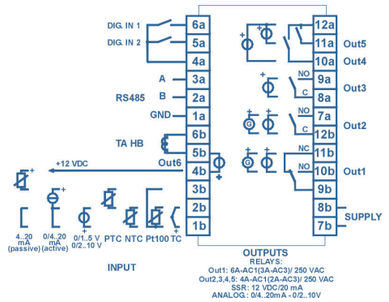
TLK94



The dimensions are expressed in mm

CONNECTIONS

TLK94



TEMPERATURE RANGES

TLK94 TEMPERATURE RANGES		
INPUT	WITHOUT DP	WITH DP
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-100 ... 1370 °C - 148 ... 2498 °F	-100.0 ... 999.9 °C -148.0 ... 999.9 °F
tc S	0 ... 1760 °C 32 ... 3200 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 750.0 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-250 ... 1300 °C -418 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-250 ... 400 °C -418 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
Infrared sensors	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt100 (IEC)	-200 ... 850 °C -50 ... 1445 °F	-199.9 ... 850.0 °C -199.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ...302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F
Pt1000 (IEC)	-200 ... 500 °C -328 ... 932 °F	-199.9 ... 500.0 °C -199.9 ... 932.0 °F

C1

- CONTROLLER / INDICATOR
- WITH 1 OR 2 ALARMS

FEATURES

DISPLAY	C1
Single	4 green digit, h 9 mm + 3 LEDs
INPUTS	
Universal	Thermocouples: L ,J (0... 600°C/32... 1112°F), T (-200... 400/-328... 752°F), K (0...1200°C/32... 2192°F), S (0... 1600°C/32... 2912°F) + Thermoresistances PT100 (-200... 600°C/-328... 1112°F or -99.9... 300.0°C/-99.9... 572.9°F) connection with 2 or 3 wires + Linear signals: 0/10... 50 mV; 0/4...20 mA + Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
OUTPUTS	
Up to 3	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac 1A/250Vac-AC1 OUT 2: 5Vdc 30mA max., ± 10% (not isolated) to drive SSR OUT 3 (opt.): Measuring retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter
FUNCTIONAL	
Control	ON/OFF or PID single action
PID functions	PID control with cycle time and overshoot control, 2 Autotuning algorithms
Signal retransmission	Measuring retransmission
Serial communication (as alternative to retransmission output)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200... 9600 baud, programmable
GENERAL	
Power supply	100... 240 Vac/Vdc (-15...+10%), 24Vac(-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3 VA max.
Dimensions / Weight	48 x 24 - depth 120 mm / 100 g approx.
Mounting	Flush in panel in 45 x 22.2 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH% without condensation
Conformity	EN 61000-6-3:2001, EN 61000-6-4:2001, EN 61000-6-2:2001

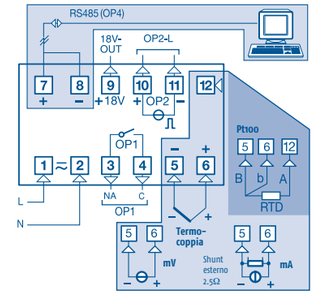
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

C1		CODE
POWER SUPPLY		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
OUTPUTS		
Relay		0
Triac		3
Voltage for SSR driving		6
SERIAL COMMUNICATION	**OPTIONS**	
Not available	Not available	00
	Transmitter Power supply	06
	Transmitter Power supply + retransmission	07
RS485	Not available	50
	Transmitter Power supply	56
SPECIAL FUNCTIONS		
Limit switch version		9
Not available		0
INSTRUCTION MANUAL		
Italian/English		0
Not available		9
FRONT FRAME COLOUR		
Dark grey		0
Dark grey + shunt 0.1%		2
SPECIAL EXECUTION		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

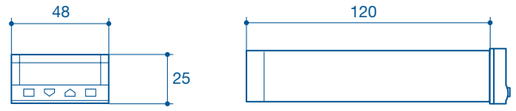
CONNECTIONS

C1



DIMENSIONS

C1



The dimensions are expressed in mm

M1

- CONTROLLER / INDICATOR / TRANSMITTER
- WITH 1 OR 2 ALARMS

FEATURES

DISPLAY	M1
Single	4 green digit, h 10 mm + 6 LEDs
INPUTS	
Universal	Thermocouples: L ,J (0... 600°C/32... 1112°F), T (-200... 400/-328... 752°F), K (0...1200°C/32... 2192°F), S (0... 1600°C/32... 2912°F) + Thermoresistances PT100 (-200... 600°C/-328... 1112°F or -99.9... 300.0°C/-99.9... 572.9°F) connection with 2 or 3 wires + Linear signals: 0/10... 50 mV; 0/4...20 mA + Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac 1A/250Vac-AC1
	OUT 2 + OUT 3: 5Vdc 30mA max., ± 10% (not isolated) to drive SSR / Relay SPST-NO (2A/250Vac-AC1)
	OUT 4 (opt.): Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter
FUNCTIONAL	
Control	ON/OFF or PID single action
PID functions	PID control with cycle time and overshoot control, 2 Autotuning algorithms
Signal retransmission	Measuring or Set Point retransmission
Serial communication (as alternative to retransmission output)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200... 9600 baud, programmable
GENERAL	
Power supply	100... 240 Vac/Vdc (-15...+10%), 24Vac(-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3.5 VA max.
Dimensions / Weight	48 x 48 - depth 120 mm / 130 g approx.
Mounting	Flush in panel in 45 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH% without condensation
Conformity	EN 61000-6-3:2001, EN 61000-6-4:2001, EN 61000-6-2:2001

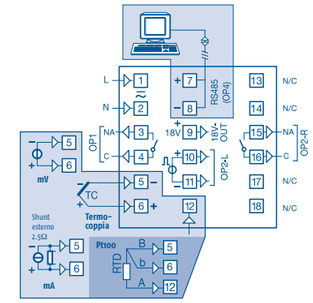
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

M1		CODE
POWER SUPPLY		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
OUTPUTS		
Relay/Relay		0
Triac/Relay		3
Relay/Voltage for SSR driving		6
Relay/triac		7
SERIAL COMMUNICATION	**OPTIONS**	
Not available	Not available	00
	Transmitter Power supply	06
	Transmitter Power supply + retransmission	07
RS485	Not available	50
	Transmitter Power supply	56
SPECIAL FUNCTIONS		
Limit switch version		9
Not available		0
INSTRUCTION MANUAL		
Italian/English		0
Not available		9
FRONT FRAME COLOUR		
Dark grey		0
Dark grey + shunt 0.1%		2
SPECIAL EXECUTION		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

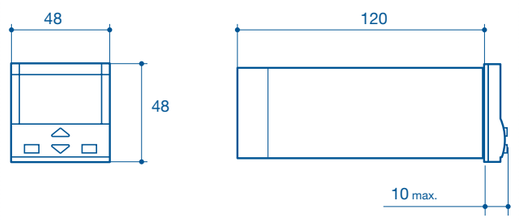
CONNECTIONS

M1



DIMENSIONS

M1



The dimensions are expressed in mm

M2

• TEMPERATURE CONTROLLER FOR HOT RUNNERS

FEATURES

DISPLAY	M2
Dual	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 8 mm + 6 LEDs
INPUTS	
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)
Auxiliary input	Current Transformer for Heater Break function
Digital inputs	1 digital input for free voltage contacts
OUTPUTS	
Up to 3	OUT 1: Relay SPST-NO 2A/250Vac-AC1 OUT 2: 5Vdc, ±10%, 30mA max. (not isolated) to drive SSR / Relay SPST-NO, 2A/250Vac-AC1 OUT 3: Relay SPST-NO 2A/250Vac-AC1
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter
FUNCTIONAL	
Control	ON/OFF, PID a singola/doppia azione
PID functions	Dead band, relative cooling gain, cooling sampling time, overshoot control, higher limit
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200... 9600 baud, programmable
GENERAL	
Power supply	100... 240Vac (-15...+10%) o 24Vdc (-25...+12%) e 24Vdc (-15...+25%) (50/60Hz)
Power consumption	2.6 VA max.
Dimensions / Weight	48 x 48 - depth 120 mm / 130 g
Mounting	Flush in panel in 45 x 45 hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH without condensation
Conformity	EN 61010-1

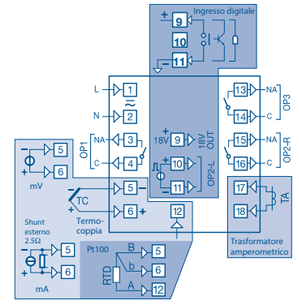
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

M2		CODE
POWER SUPPLY		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
OUT 2		
Relay/Voltage for SSR driving		1
Voltage for SSR driving		6
INPUT DIGITALE	**OPTIONS**	
Not available	Not available	00
	Current Transformer input (CT)	03
INPUT digitale	Not available	90
	Current Transformer input (CT)	93
SPECIAL FUNCTIONS		
Not available		0
SP modification from digital input		6
Average Safety Output		7
SP modification from digital input + Average Safety Output		8
INSTRUCTION MANUAL		
Italian/English		0
Not available		9
FRONT FRAME COLOUR		
Dark grey		0
Dark grey + shunt 0.1%		2
SPECIAL EXECUTION		
Not available		0
On DIN rail		1
On DIN rail no display		2
Tropicalized		3

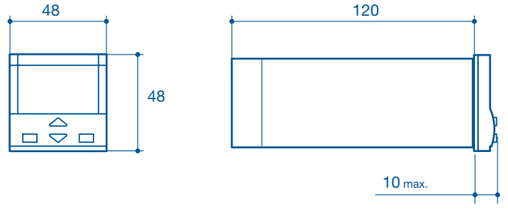
CONNECTIONS

M2



DIMENSIONS

M2



The dimensions are expressed in mm

M3/M4

- HEAT/COOL TEMPERATURE CONTROLLER
- HEAT/COOL TEMPERATURE CONTROLLER WITH ANALOGUE OUTPUT

FEATURES

DISPLAY	M3	M4
Dual	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 6.75 mm + 5 LEDs	
INPUTS		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Digital inputs	--	Auto/man switching, stand-by/Set Point switching, keyboard lock, timer
Auxiliary input (optional)	Current Transformer for Heater Break function	
OUTPUTS		
Up to 4	OUT 1: Relay SPST-NO 2A/250Vac-AC1 / Triac OUT 2: 5Vdc, ±10%, 30mA max.(not isolated) to drive SSR / Relay SPST-NO, 2A/250Vac-AC1 OUT 3: Relay SPST-NO 2A/250Vac-AC1 / Triac	
	OUT 4 (opt.): Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. (as alternative to RS485)	OUT 4: (Opt.) control output, current: 0/4... 20mA 750Ω/15V max.
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter	
Outputs configurations	1 loop PID or ON/OFF double action with 1 or 2 alarms	
FUNCTIONAL		
Control	ON/OFF or PID single/double action	
Alarms	2 alarms programmable as high/low or band alarm Hysteresis 0.1... 10.0% e.s.	
PID functions	Dead band, relative cooling gain, cooling sampling time, overshoot control, higher limit	
Special functions	Sensor Break, Heater Break, Latching/Blocking and loop break	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication (opt.)	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200... 9600 baud, programmable	
GENERAL		
Power supply	100... 240 Vac (-15...+10%) o 24Vac (-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	6 VA max.	
Dimensions / Weight	48 x 48 - depth 120 mm / 130 g	
Mounting	Flush in panel in 45 x 45 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

HOW TO ORDER

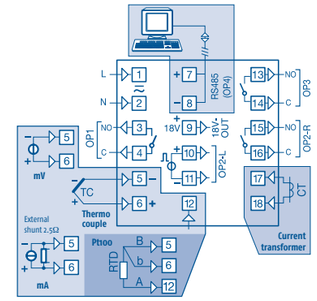
To compose the part number, pls. choose one of the option for each variable

M3 / M4		CODE
POWER SUPPLY		
100... 240 Vac/Vdc		3
24 Vac/Vdc		5
OUT 1, 2 E 3		
Relay/Relay/Voltage for SSR driving		0
Relay/Relay/Voltage for SSR driving + Relay		1
Relay/Relay/Voltage for SSR driving + triac		2
Triac/Relay/Voltage for SSR driving + Relay		4
Triac/Relay/Voltage for SSR driving + triac		5
Relay + triac/Voltage for SSR driving + Relay (M3 only)		7
Relay + Voltage for SSR driving (M3 only)		8
SERIAL COMMUNICATION + DIGITAL INPUT	**OPTIONS**	
Not available	Not available	00
	Current Transformer input (CT)	03
	Transmitter supply 18V	06
	Transmitter supply 18V + Retransmission (*) + CT input	07
	Transmitter supply 18V+ CT input	08
	Transmitter supply 18V + CT input + Retransmission (*)	09
RS485	Not available	50
	Transmitter supply 18V	56
	Transmitter supply 18V + CT input	58
INPUT digitale (Solo M4)	Not available	90
	CT input	93
	Analogue Control Output	97
	Analogue Control Output + CT input	99
SPECIAL FUNCTIONS		
Not available		0
Start-up + Timer		2
Limit switch version		9
INSTRUCTION MANUAL		
Italian/English		0
Not available		9
FRONT FRAME COLOUR		
Dark grey		0
Dark grey + shunt 0,1%		2
SPECIAL EXECUTION		
Not available		0
On DIN rail		1
Mounting B/DIN, No display		2
Tropicalized		3

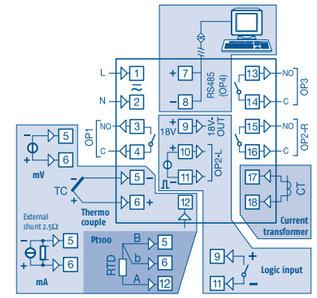
(*) With code 07 and code 09, the analogue output can be used also as control output.

CONNECTIONS

M3

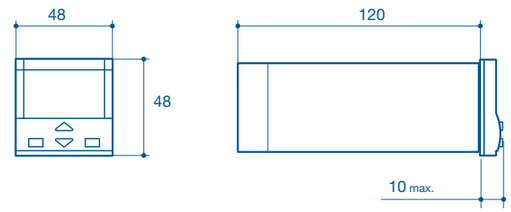


M4



DIMENSIONS

M3 / M4



The dimensions are expressed in mm

X1/X3

- HEAT-COOL TEMPERATURE CONTROLLERS
- DOUBLE ACTION CONTROLLER WITH ANALOGUE OUTPUT

FEATURES

DISPLAY	X1	X3
Dual	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 9 mm + 11 LEDs	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 9 mm + 16 LEDs,
INPUTS		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Auxiliary input	Non isolated remote Set Point: current 0/4... 20mA or voltage 1... 5/ 0... 5/ 0... 10V Current Transformer for Heater Break function	
Digital inputs	--	3
OUTPUTS		
Up to 5	OUT 1: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 2: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 3: Relay,SPDT, 2A/250Vac (4A/120Vac) OUT 4: Relay, SPDT, 2A/250Vac (4A/120Vac) or Logic not isolated: 0/5Vdc, ±10% 30mA max. OUT 5: Analogue for Measuring or Set Point retransmission, current: 0/4... 20mA max. 750Ω/10V max.	
Analogue control output	Measuring or Set Point retransmission, current: 0/4... 20mA 750Ω/15V max. or voltage: 0... 1/5/10V 500Ω/20mA max.	
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)	
FUNCTIONAL		
Control	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms PID for Servomotor control
Alarms	Up to 3	
PID functions	Error dead band, overshoot control, manual reset, cycle time, Control output high limit, Soft-start output valve, output safety value	
Double action (Heat-Cool) with overlap	Dead band, Relative cool gain, cycle time (time proportional output), Cool output high limit For X3 only: Cool output hysteresis	
Servomotor control (without position potentiometer)	--	Motor travel time, motor minimum step
Pre-programmed Set Point	--	1 program, 8 segments 1 initial and 1 end, from 1 to 9999 cycles/continuous cycling
Special functions	Timer (1... 9999s/min), Stand-by Set Point, Start-up, Start-up Set Point	
Tuning	One Shot Tuning	Fuzzy Tuning One Shot
Auto/Man Station	--	Standard with Bumpless function, by keypad digital input or serial communication
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200, 2400, 4800, 9600 bit/sec, 2 wires	
GENERAL		
Power supply	100... 240Vac (-15... +10%) or 24Vac (-25... +12%) and 24Vdc (-15... +25%) / 50/60Hz	
Power consumption	6VA max.	
Dimensions / Weight	48 x 96 mm - depth 110 mm / 250 g approx.	
Mounting	Flush in panel in 45 x 92 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

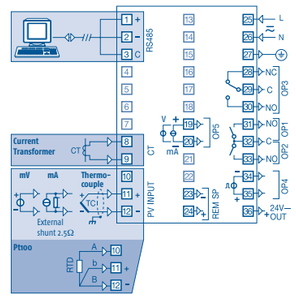
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

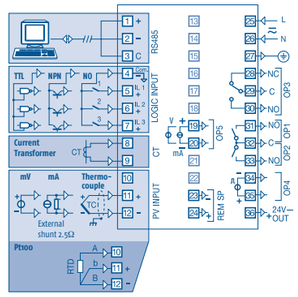
X1 / X3	CODE
POWER SUPPLY	
100... 240 Vac/Vdc	3
24 Vac/Vdc	5
OUT 1,OUT 2, OUT 3 AND OUT 4	
Relay-Relay-Relay-Voltage for SSR driving	1
Triac-triac-Relay-Voltage for SSR driving	5
Relay-Relay-Relay-Relay	9
SERIAL COMMUNICATION	
Not available	0
RS485	5
OPTIONS	
Not available	0
Servomotor (X3 only)	2
Retransmission + Remote Set Point (X1 only)	5
Analogue Output + Remote Set Point (X3 only)	5
Servomotor + Analogue Output + Remote Set Point (X3 only)	7
SPECIAL FUNCTIONS	
Not available	0
Start-up + Timer	2
1 Program 8 segments (X3 only)	3
INSTRUCTION MANUAL	
Italian/English	0
Not available	9
FRONT FRAME COLOUR	
Dark grey	0
Dark grey + shunt 0.1%	2
SPECIAL EXECUTION	
Not available	0
Tropicalized	3

CONNECTIONS

X1

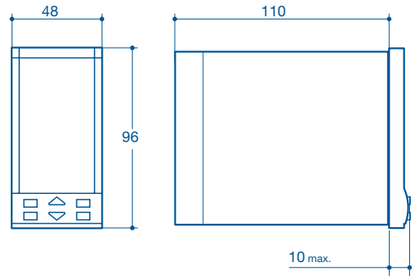


X3



DIMENSIONS

X1 / X3



The dimensions are expressed in mm

Q1/Q3

- HEAT-COOL TEMPERATURE CONTROLLERS
- DOUBLE ACTION CONTROLLER WITH ANALOGUE OUTPUT

FEATURES

DISPLAY	Q1	Q3
Dual	Main display: 4 green digit, h 15 mm Secondary display: 4 green digit, h 12 mm + 11 LEDs	Main display: 4 green digit, h 15 mm Secondary display: 4 green digit, h 12 mm + 16 LEDs
INPUTS		
Universal	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S (0... +1600°C / 32...2912°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA Infrared sensors or special ranges (custom)	
Accuracy	0.25% ±1 digit (for thermoelements); 0.1% ±1 digit (for mA and mV)	
Auxiliary input	Non isolated remote Set Point: current 0/4... 20mA or voltage 1... 5/ 0... 5/ 0... 10V Current Transformer for Heater Break function	
Digital inputs	--	3
OUTPUTS		
Up to 5	OUT 1: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 2: Relay, NO, 2A/250Vac (4A/120Vac) or TRIAC 1A/250Vac OUT 3: Relay,SPDT, 2A/250Vac (4A/120Vac) OUT 4: Logic not isolated: 0/5Vdc, ±10% 30mA max. for retransmission OUT 5: Analogue for Measuring or Set Point retransmission, current: 0/4... 20mA max. 750Ω/10V max.	
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)	
FUNCTIONAL		
Control	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms	PID with overshoot control or ON/OFF single/double action with 1, 2 or 3 alarms PID for Servomotor control
Alarms	Up to 3	
PID functions	Error dead band, overshoot control, manual reset, cycle time, Control output high limit, Soft-start output valve, output safety value	
Double action (Heat-Cool) with overlap	Dead band, Relative cool gain, cycle time (time proportional output), Cool output high limit For Q3 only: Cool output hysteresis	
Servomotor control (without position potentiometer)	--	Motor travel time, motor minimum step
Pre-programmed Set Point	--	1 program, 8 segments 1 initial and 1 end, from 1 to 9999 cycles/continuous cycling
Special functions	Timer (1... 9999s/min), Stand-by Set Point, Start-up, Start-up Set Point	
Tuning	One Shot Tuning	Fuzzy Tuning One Shot
Auto/Man Station	--	Standard with Bumpless function, by keypad digital input or serial communication
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires	
Baud rate	1200, 2400, 4800, 9600 bit/sec, 2 wires	
GENERAL		
Power supply	100... 240Vac (-15... +10%) or 24Vac (-25... +12%) and 24Vdc (-15... +25%) / 50/60Hz	
Power consumption	6 VA max.	
Dimensions / Weight	96 x 96 mm - depth 110 mm / 470 g approx.	
Mounting	Flush in panel in 92 x 92 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) /-20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

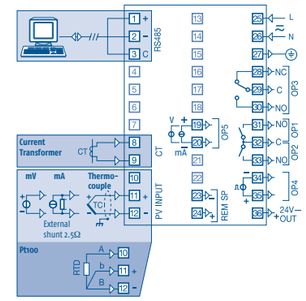
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

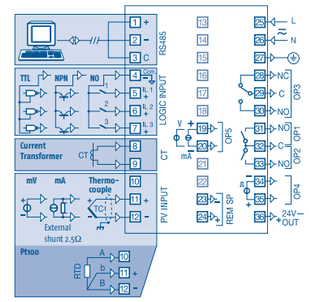
Q1 / Q3	CODE
POWER SUPPLY	
100... 240 Vac/Vdc	3
24 Vac/Vdc	5
OUT 1,OUT 2, OUT 3 AND OUT 4	
Relay-Relay-Relay-Voltage for SSR driving	1
Triac-triac-Relay-Voltage for SSR driving	5
Relay-Relay-Relay-Relay	9
SERIAL COMMUNICATION	
Not available	0
RS485	5
OPTIONS	
Not available	0
Servomotor (Q3 only)	2
Retransmission + Remote Set Point (Q1 only)	5
Analogue Output + Remote Set Point (Q3 only)	5
Servomotor + Analogue Output + Remote Set Point (Q3 only)	7
SPECIAL FUNCTIONS	
Not available	0
Start-up + Timer	2
1 Program 8 segments (Q3 only)	3
INSTRUCTION MANUAL	
Italian/English	0
Not available	9
FRONT FRAME COLOUR	
Dark grey	0
Dark grey + shunt 0.1%	2
SPECIAL EXECUTION	
Not available	0
Tropicalized	3

CONNECTIONS

Q1

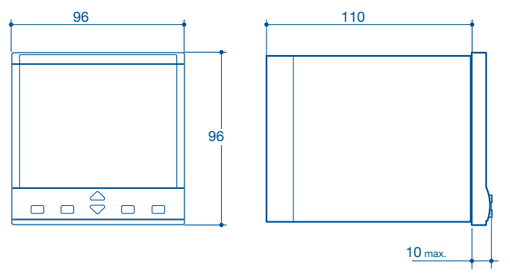


Q3



DIMENSIONS

Q1 / Q3



The dimensions are expressed in mm

ADVANCED PROGRAMMER CONTROLLERS

The most complete range you may wish!

Single and muliloop controllers and advanced programmers, multifunction and with incorporated and independent timer, in all sizes.

New KUBE line: more and more in less space!
Pocket size, energy saving functions and advanced features.

ADVANCED PROGRAMMER CONTROLLERS

FEATURES		KM3-KM3W	KM5-KM5PW	KX3	KX5P	KX6	KR3-KR3W	KRD3	KR5P	K31	K32	K38	K39	K48	K49	K85	K30	M5	X5	Q5
Dimensions (mm)	78x35						•	•	•	•	•	•	•							
	48x48	•	•											•	•			•		
	48x96			•	•	•													•	
	70 x 84 4 DIN Modules															•	•			
	96x96																			•
Without display								•												
3 dynamic colour triple LED display						•			•											
3 dynamic colour dual LED display		•	•	•	•		•													
White+amber LED display		•	•																	
4 digit Single display										•		•			•	•				
4 digit Dual display											•		•	•				•		
4 digit Triple display																			•	•
"Sensitive Touch" keyboard											•									
Input	Universal	•	•	•	•		•	•	•									•	•	•
	J-K-S-R-T + IR + PTC-NTC									•	•	•	•	•	•	•	•			
	J-K-S-R-T + IR + Pt100									•	•	•	•	•	•	•	•			
	J-K-S-R-T + IR + 0/4... 20 mA					•														
	ΔT PT100																	•	•	•
	Digital	2		2			2			2	2			2	2	2		2	3	3
	Frequency																		•	•
	Potentiometer																	•	•	•
	For CT																	•		
Relay or voltage for SSR drive outputs		4	4	4	4	4	4	4	4	4	4	2	2	3	3	3	5	3	4	4
Analogue current or voltage outputs		1	1	1	1	1	1	1	1									1	2	2
Measuring or Set Point retransmission		•	•	•	•	•	•	•	•									•	•	•
Power supply	12 Vac/Vdc									•	•	•	•							
	24 Vac/Vdc	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Control	ON/OFF and PID	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	Servomotor control		•		•	•		•	•									•	•	•
RS485 ModBus Slave		•	•	•	•	•	•	•	•	•	•					•	•	•	•	•
RS485 ModBus Master		•	•	•	•	•	•	•	•	•	•					•	•		•	•
Profibus DP																			•	•
Mathematical package																			•	•
Timer on board		•		•			•			•	•	•	•	•	•	•	•		•	•
Programmer		•		•			•			•	•	•	•	•	•	•	•	•	•	•
CE certification		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
UL approval		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		•	•	•
ENEC approval											•									

KM3

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

evolution

FEATURES

DISPLAY	KM3
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

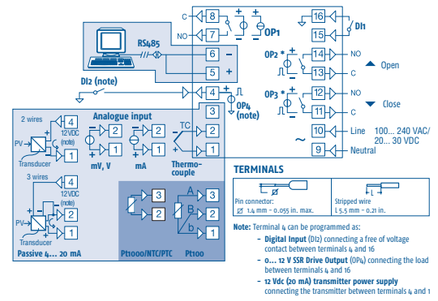
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KM3	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

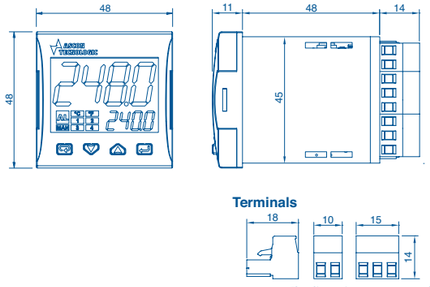
CONNECTIONS

KM3



DIMENSIONS

KM3



The dimensions are expressed in mm

KM3W

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

evolution

FEATURES

DISPLAY	KM3W
Dual LED	Main display: 4 digit h 15.5 mm white colour
	Secondary display: 4 amber digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

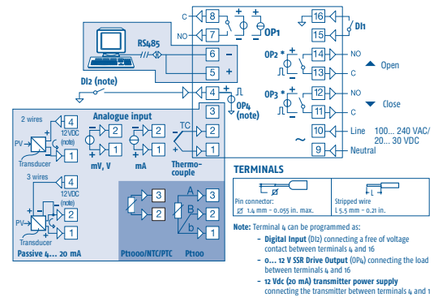
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KM3W	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

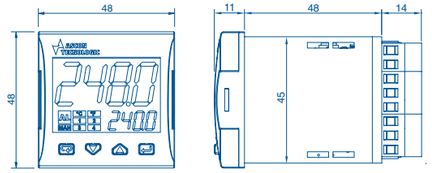
CONNECTIONS

KM3W



DIMENSIONS

KM3W



The dimensions are expressed in mm

KM5P

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

evolution

FEATURES

DISPLAY	KM5P
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

HOW TO ORDER

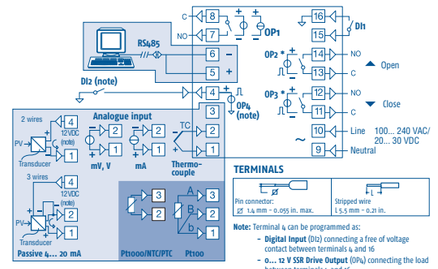
To compose the part number, pls. choose one of the option for each variable

KM5P	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

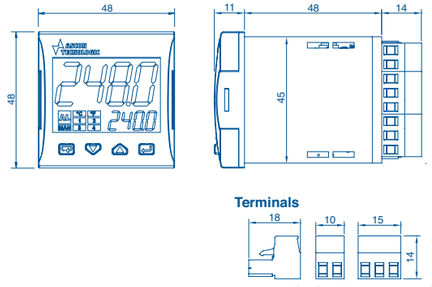
CONNECTIONS

KM5P



DIMENSIONS

KM5P



The dimensions are expressed in mm

KM5PW

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

evolution

FEATURES

DISPLAY	KM5PW
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

HOW TO ORDER

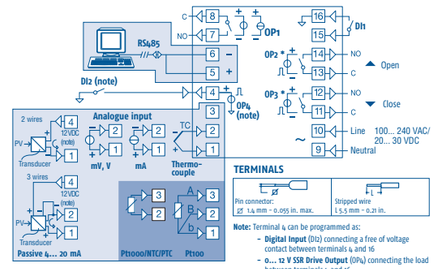
To compose the part number, pls. choose one of the option for each variable

KM5PW	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

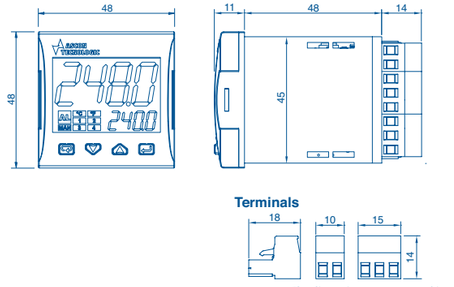
CONNECTIONS

KM5PW



DIMENSIONS

KM5PW



The dimensions are expressed in mm

KX3

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

evolution

FEATURES

DISPLAY	KX3
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 10 mm
	20 segments Bargraph
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 76 mm / 160 g
Mounting	Flush in panel in 45 x 93 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65 mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

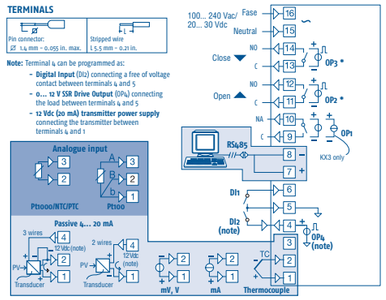
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KX3	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

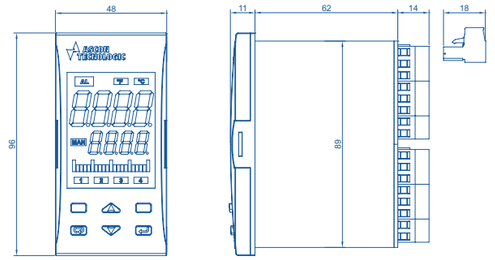
CONNECTIONS

KX3



DIMENSIONS

KX3



The dimensions are expressed in mm

KX5P

evolution

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

FEATURES

DISPLAY	KX5P
Dual LED	Main display: 4 digit h 15.5 mm. 3 colours: red, green and amber
	Secondary display: 4 green digit, h 10 mm
	20 segments Bargraph
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPST-NO 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	48 x 96 mm (1/8 DIN) - depth 76 mm / 160 g
Mounting	Flush in panel in 45 x 93 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65 mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

HOW TO ORDER

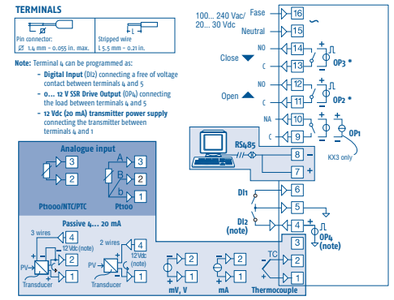
To compose the part number, pls. choose one of the option for each variable

KX5P	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPST 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

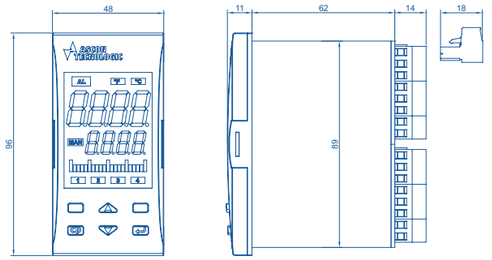
CONNECTIONS

KX5P



DIMENSIONS

KX5P



The dimensions are expressed in mm

KX6

- 3 DYNAMIC COLOUR LED DISPLAY
- INPUT FROM POTENTIOMETER
- SELF-CALIBRATION POTENTIOMETER
- SELF-PACED RUNNING TIME SERVOMOTOR

evolution

FEATURES

DISPLAY	KX6
3 displays, LED type	Upper (main) display: 15.5 dynamic three colours red, green and amber or 1 fixed selectable colour
	Central display: 4 digit height 10 mm (green colour)
	Lower display: 2 1/2 digit height 10 mm (green colour)
INPUTS	
Input 1 (configurable)	Thermocouples: J (-50... +1000°C/-58... +1832°F), K (-50... +1370°C/-58... +2498°F), S/R (-50... +1760°C/-58... +3200°F), T (-70... +400°C/-94... +752°F) Linear signals: 0/4... 20mA
Measurement accuracy	±0.5% span ±1 digit, (±1% span ±1 digit for T/c type S)
Input 2	Potentiometer 100 Ω... 10 kΩ (option)
Digital inputs	DI1: 1 contact input
	DI2: Isolated voltage input (24 VAC/DC or 110/230 VAC) (option)
OUTPUTS	
Up to four	OUT1: Relay SPST-NO 2A/240 VAC or analogue 0/4... 20 mA, 0/2... 10 V galvanically isolated
	OUT2: Relay SPST-NO 2A/240 VAC
	OUT3 and OUT4: Relay SPST-NO 2A/240 VAC (for resistive loads)
FUNCTIONAL	
Control	PID single action (direct or reverse) for servomotor control or linear output (mA/V), PID Heating or Heating/Cooling action.
	On/Off, On/Off with Neutral Zone, Autotune, Selftune and evoTune. Overshoot control
Alarms	2 alarms (configurable as absolute, deviation and band alarm)
Set Point	4 Set points selectable
Serial communications	TTL (standard) + RS485 (optional), protocol: MODBUS RTU
Communications speed	1200... 38400 baud selectable (8 bit + 1 stop bit, no parity)
Evogreen	Time based Display switch-off, selectable
Other functions	Self-calibration potentiometer
	Auto learning servomotor stroke time
GENERAL	
Power supply	100... 240 VAC/DC (-15... +10%), 50/60 Hz, power consumption 7 VA max.
Temperature	Operating: 0... 50°C (32... 122°F); Storage: -20... +70°C (-4... +158°F);
Relative humidity	20... 95 RH% with no condensation
Front removable	Instrument removable from the case without unwiring or opening the cabinet
Conformity	EN 61010-1, EN 61326

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KX6	CODE
POWER SUPPLY	
100... 240 Vac	H
INPUT	
TC, mA, mV + digital input 1 (*)	B
OUT 1 + OUT2	
OUT1 + OUT2: Relay SPST-NO 2A for Servomotor driving	MM
OUT1: 0/4... 20 mA, 0/2... 10V galvanically isolated OUT2: Not available	I-
OUT 3	
Relay SPST-NO 2A	R
OUT 4	
Relay SPST-NO 2A	R
OPTIONS (TTL MODBUS IS ALWAYS AVAILABLE)	
Potentiometer input + Digital Input 2 + RS 485 Modbus	C
Potentiometer input + Digital Input 2	P
RS485 Modubus	S
None	-

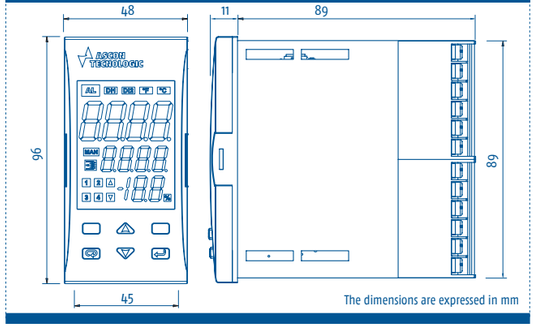
(*) It's possible to obtain an input 0... 10V or 0... 5V, ordering the following part no, respectively:
AP ADPINMV-KX-V10
AD ADPINMV-KX-V5

CONNECTIONS

KX6

DIMENSIONS

KX6



KR3

evolution

- 3 DYNAMIC COLOUR LED DISPLAY
- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER / TIMER
- WORKING HOURS COUNTER

FEATURES

DISPLAY	KR3
Dual LED	Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

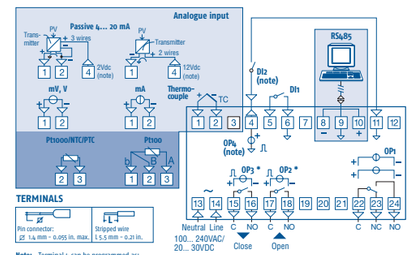
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KR3	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

CONNECTIONS

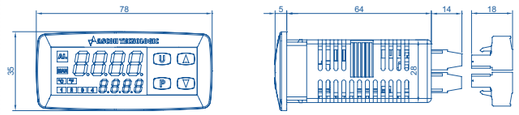
KR3



Note: Terminal 4 can be programmed as:
- **Digital input** (DI2) connecting a free of voltage contact between terminals 4 and 11
- **0... 12 V SSR Drive Output** (OP4) connecting the load between terminals 4 and 11
- **12 Vdc (20 mA) transmitter power supply** connecting the transmitter between terminals 4 and 1

DIMENSIONS

KR3



The dimensions are expressed in mm

KRD3

- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER
- INDEPENDENT TIMER
- WORKING HOURS COUNTER

evolution

FEATURES

INPUTS	KRD3
Input	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital input	1, always on board
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm - 200 g
Mounting	On OMEGA DIN A rail or on wall
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

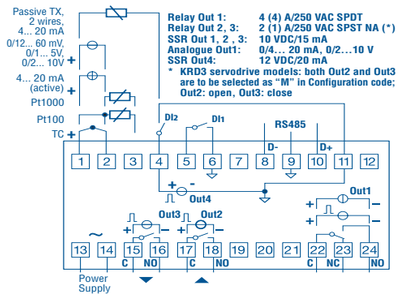
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KRD3	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV/digital input	C
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated	I
OUT 2	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
OUT 3	
Relay SPST -NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
OUT 4	
Digital input or digital output or transmitter supply	D
RS485	
Available (Standard)	S
Not available (Optional)	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

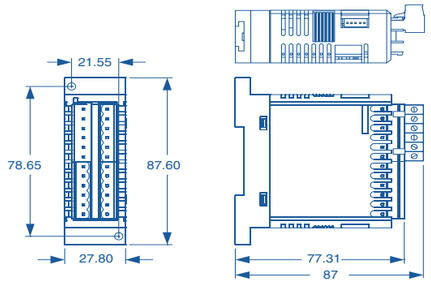
CONNECTIONS

KRD3



DIMENSIONS

KRD3



The dimensions are expressed in mm

KR5P

- 3 DYNAMIC COLOUR LED DISPLAY
- 8 PROGRAMS AND 96 SEGMENTS
- "SEGMENT RECOVERY" + "ELAPSED TIME RECOVERY" (RESOLUTION 1 MIN)

evolution

FEATURES

DISPLAY	KR5P
Dual LED	Main display: 4 digit h 11.7 mm. 3 colours: red, green and amber Secondary display: 4 green digit, h 7 mm
INPUTS	
Universal	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital inputs	1 or 2 according to instrument's part number (the 2nd digital input is alternative to OUT 4)
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply or 2nd digital input
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Servomotor control	Available
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOgreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 12 segments with guaranteed soak
Programs storage (optional)	Up to 8 programs
Program sequence	Possibility to manage sequences up to 4 programmes with different time base (h.min - min.s)
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm (1/16 DIN) - depth 63 mm / 125 g
Mounting	Flush in panel in 45 x 45 mm hole
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 65, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

HOW TO ORDER

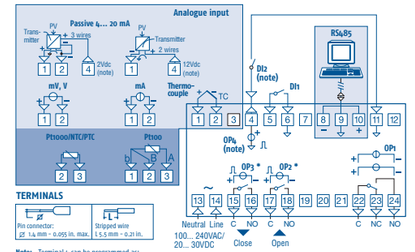
To compose the part number, pls. choose one of the option for each variable

KR5P	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV + digital input 1	C
TC, NTC, PTC, mA, V, mV + digital input 1	E
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	O
0/4... 20 mA, 0/2... 10V galvanically isolated (control and retransmission)	I
OUT 2	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 3	
Relay SPST 2A	R
Vdc for SSR driving	O
Relay SPST 2A for Servomotor driving	M
Not available	-
OUT 4	
Digital input 2 or digital output or transmitter supply	D
RS485	
Available	S
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

(*) To obtain the Servomotor control, OUT2 and OUT3 have to be selected as M.

CONNECTIONS

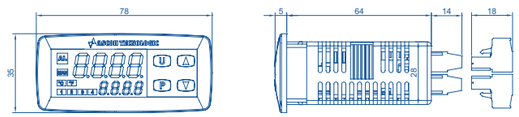
KR5P



Note: Terminal 4 can be programmed as:
- **Digital input** (DI2) connecting a free of voltage contact between terminals 4 and 11
- **0... 12 V SSR Drive Output** (OPA) connecting the load between terminals 4 and 11
- **12 Vdc (20 mA) transmitter power supply** connecting the transmitter between terminals 4 and 1

DIMENSIONS

KR5P



The dimensions are expressed in mm

K 31/32/38/39

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION




FEATURES

DISPLAY	K31	K32	K38	K39
Display	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm
INPUTS				
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)			
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)			
	Linear signals 0/4... 20mA			
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V			
Accuracy	±0.5% fs + 1 digit; tc S ±1% fs + 1 digit			
Digital inputs	2 for free voltage contacts		--	
OUTPUTS				
Up to 4 (K31 and K32) Up to 2 (K38 and K39)	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR		OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR	
Auxiliary power supply	12 Vdc/20 mA max.			
FUNCTIONAL				
Control	ON/OFF, Neutral Zone, PID single and double action			
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms			
Multi Set Point	Up to 4 pre-programmable Set Point			
Program	Up to 8 segments with guaranteed soak			
Timer	Independent with 4 function modes			
Signal retransmission	Set Point		--	
Serial communication	RS485 with ModBus-RTU (JBUS) protocol		TTL ModBus	
Baud rate	1200... 38400 baud, programmable		--	
GENERAL				
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)			
Power consumption	6 VA approx.			
Dimensions / Weight	78 x 35 mm - depth 64 mm or 78.5 mm with plug-in terminals / 180 g approx.		78 x 35 mm - depth 64 mm / 180 g approx.	
Keyboard	Mechanical	Mechanical or "Sensitive Touch"	Mechanical	
Mounting	Flush in panel in 71 x 29 mm hole			
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm²		Screw terminal block 2 x 1 mm²	
Front protection degree	IP 65, mounted on panel with gasket			
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)			
Operating humidity	20... 85 RH% without condensation			
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)			

HOW TO ORDER

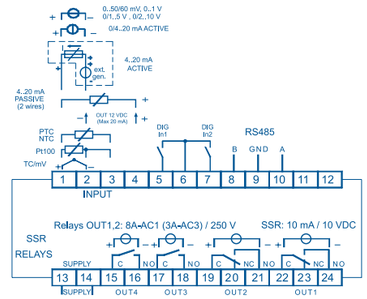
To compose the part number, pls. choose one of the option for each variable

K31 / K32 / K38 / K39	CODE
KEYBOARD	
Mechanical	-
Sensitive-Touch (*) - K32 only	S
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Mosfet output (K31 only)	M
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Not available	-
OUT 3 (SOLO K31 E K32)	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
OUT 4 (SOLO K31 E K32)	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
SERIAL COMMUNICATION (K31 AND K32)	
RS485	S
TTL ModBus	-

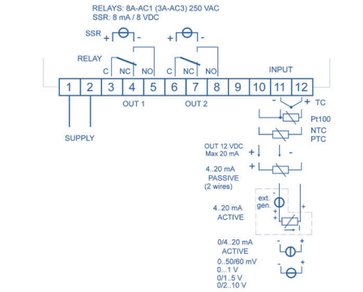
(*) K32: Capacitive Touch screen keyboard

CONNECTIONS

K31 / K32

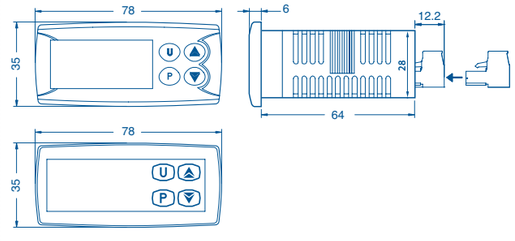


K38 / K39



DIMENSIONS

K31 / K32 / K38 / K39



The dimensions are expressed in mm

K 48/49

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION

FEATURES

DISPLAY	K48	K49
Display	Single: 4 red digit, h 12 mm + 3 LEDs Bargraph	Dual: 4 red and 4 green digit, h 7mm
INPUTS		
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)	
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)	
	Linear signals 0/4... 20mA	
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V	
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit	
Digital inputs	2 for free voltage contacts, as alternative to OUT 3	
OUTPUTS		
Up to 3	OUT 1 and OUT 2: Relay SPST-NO (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR	
Auxiliary power supply	12 Vdc/20 mA max.	
FUNCTIONAL		
Control	ON/OFF, Neutral Zone, PID single and double action	
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms	
Multi Set Point	Up to 4 pre-programmable Set Point	
Program	Up to 8 segments with guaranteed soak	
Timer	Independent with 4 function modes	
Serial communication	TTL ModBus	
GENERAL		
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	
Power consumption	6 VA approx.	
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 98 mm / 180 g approx.	
Mounting	Flush in panel in 45 x 45 mm hole	
Connections	Screw terminal block 2 x 1 mm²	
Front protection degree	IP 65, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)	

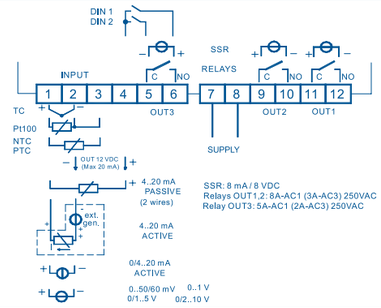
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K48/K49	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3/ DIGITAL INPUTS	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
2 digital inputs	D
Not available	-

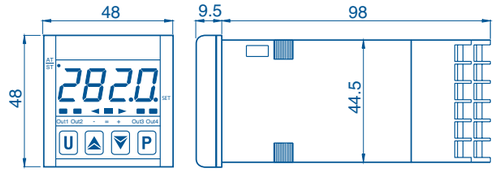
CONNECTIONS

K48 / K49



DIMENSIONS

K48 / K49



The dimensions are expressed in mm

K85

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION

FEATURES

DISPLAY	K85
Single	4 red digit, h 12 mm + 3 LEDs Bargraph
INPUTS	
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 3	OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	4 DIN rail module, 70 x 84 mm - depth 60 mm / 230 g approx.
Mounting	On OMEGA DIN A rail
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 40
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

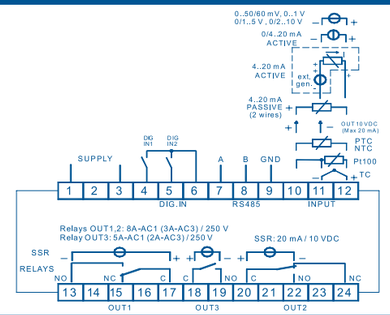
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K85	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Not available	-
OUT 3/ DIGITAL INPUTS	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL ModBus	-
DIGITAL INPUT	
2 digital inputs	D
Not available	-

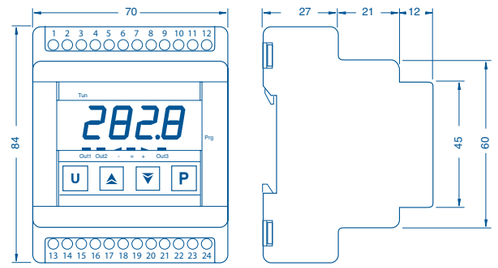
CONNECTIONS

K85



DIMENSIONS

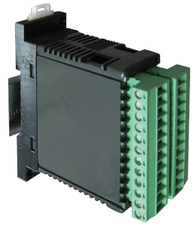
K85



The dimensions are expressed in mm

K30

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



FEATURES

INPUTS	K30
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	±0.5% fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 5	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 5: 12V ±20% 20 mA max. to drive SSR (always available on board)
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75.5 mm or 78.5 mm with plug-in terminals / 180 g approx.
Mounting	On OMEGA DIN A rail
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm²
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

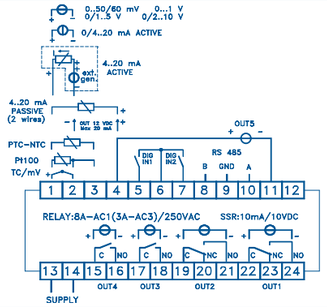
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K30	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1 / OUT 5 SSR (ALWAYS ON BOARD)	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL ModBus	-

CONNECTIONS

K30



DIMENSIONS

K30

The dimensions are expressed in mm

M5

- PROCESS CONTROLLER
- ANALOGUE CONTROL OUTPUT OR SERVOMOTOR OUTPUT
- 16 SEGMENTS PROGRAMMER

FEATURES

DISPLAY	M5
Double	Main display: 4 green digit, h 10 mm Secondary display: 4 green digit, h 8 mm + 8 LEDs
INPUTS	
Universal	Thermocouples: L/J/E (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32...3272°F), W3/W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/4...20 mA, 0... 50mV/0... 300mV, 0/1... 5V/0... 10V - Engineering units with or without decimal and square root extraction Infrared sensors or special ranges (custom)
Accuracy	0.25% ±1 digit (thermoelements) o 0.1% ±1 digit (for mA and mV)
Auxiliary inputs (opt.)	Non isolated remote Set Point: current 0/4... 20mA or voltage 1...5/ 0...5/ 0...10V
	Current Transformer for Heater Break function
	Potentiometer position feedback measurement
Digital inputs	2
OUTPUTS	
Up to 4	OUT 1 and OUT 2: Relay NO, 2A/250Vac for resistive loads or Triac 1A/250Vac for resistive loads OUT 3: Relay NO, 2A/250Vac for resistive loads OUT 4: Analogue in current: 0/4...20mA max. 750Ω/10V max./ voltage: 0...1/5/10V 500Ω / 20mA max. (galvanically isolated) or 0...18Vdc, 20mA max. to drive SSR
Auxiliary power supply	+18Vdc ±20%, 30mA max. for external transmitter (2, 3 or 4 wires)
FUNCTIONAL	
Control	PID, ON/OFF
PID functions	PID H/C control, Dead band, overshoot control, manual reset, cycle time, high and low limits, max. control output speed rate, Soft-start, safety output, forcing output, Fuzzy Tuning, Adaptive Tuning
Operating modes	1 Loop with single/double action with or without programmer
Set Point	Local + 2 stored Set points, only Remote, Local and Remote, Local with trim, Remote with trim, Time programmable
Program	1 program, 16 segments, 1... 9999 cycles or continuous cycling (OFF)
Auto/Man station	Integrated, Bumpless operated from keyboard, digital inputs and serial communication
Servomotor control	Motor travel time, motor minimum step
Signal retransmission	Measuring or Set Point retransmission
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol, with 2 wires
Baud rate	1200, 2400, 4800, 9600, 19200 bit/s, a 3 wires
GENERAL	
Power supply	100... 240 Vac (-15...+10%) o 24Vac (-25...+12%) e 24Vdc (-15...+25%) (50/60Hz)
Power consumption	3VA max.
Dimensions / Weight	48 x 48 mm (1/16 DIN), depth 150 mm / 230 g approx.
Mounting	Flush in panel in 45 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	5... 95% RH without condensation
Conformity	EN 61010-1

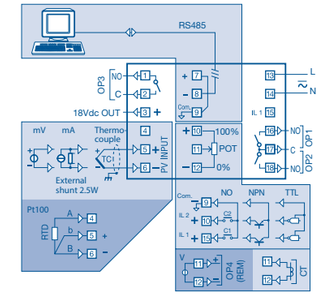
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

M5		CODE
POWER SUPPLY		
100... 240 Vac		3
24 Vac/Vdc		5
OUT 1 AND OUT 2		
Relay/Relay		1
Relay/triac		2
Triac/Relay		4
Triac/triac		5
SERIAL COMMUNICATION	**OPTIONS**	
Not available	Not available	00
	Potentiometer	01
	Remote Set Point	02
	CT input	03
	Voltage for SSR driving/ Analogue output	04
	Voltage for SSR driving/ Analogue output+ Remote Set point	05
RS485	Not available	50
	Potentiometer	51
	Remote Set Point	52
	CT input	53
	Voltage for SSR driving/ Analogue output	54
SPECIAL FUNCTIONS		
Not available		0
Programmer		1
INSTRUCTION MANUAL		
Italian/English		0
Not available		9
FRONT FRAME COLOUR		
Dark grey (std)		0
Dark grey shunt 0.1%		2
SPECIAL EXECUTION		
Not available		0
On DIN rail		1
On DIN rail without display		2
Tropicalized		3

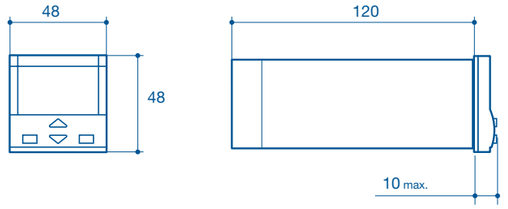
CONNECTIONS

M5



DIMENSIONS

M5



The dimensions are expressed in mm

X5/Q5

- CONTROLLER WITH PROFIBUS DP
- UP TO 6 OUTPUTS: 2 ANALOGUE OUTPUTS AND 4 SET POINTS
- PROGRAMMER AND MATHEMATICAL PACKAGE

FEATURES

DISPLAY	X5	Q5
Triple	Main display (PV): 4 green digit, h 12 mm Secondary display (SP): 4 green digit, h 7 mm Third display (OUT): 4 green digit, h 7 mm	Main display (PV): 4 green digit, h 15 mm Secondary display (SP): 4 green digit, h 12 mm Third display (OUT): 4 green digit, h 9 mm
INPUTS		
Universal	Thermocouples: L/J/E (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32...3272°F), W3/W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 connection with 2 or 3 wires (-200... +600°C / -328... +1112°F) Linear signals: 0/4...20 mA, 0... 50mV/0... 300mV, 0/1... 5V/0... 10V - Engineering units with or without decimal and square root extraction Infrared sensors or special ranges (custom)	
Frequency	0...2000 Hz, 0...20000 Hz;	
Auxiliary inputs	Remote Set Point not isolated (accuracy 0.1%) Current 0/4...20 mA Voltage 0/1... 5V/0... 10V	
	Potentiometer position feedback measurement	
Digital inputs	3 for voltage contacts	
OUTPUTS		
Up to 6	OUT 1 and OUT 2: Relay NO, 2A/250Vac or Triac, 1A/250Vac, for resistive loads OUT 3: Relay SPDT, 2A/250Vac for resistive loads OUT 4: Relay NO, 2A/250Vac for resistive loads OUT 5 and OUT6: current: 0/4...20mA max. 750Ω/10V max. / voltage: 0...1/5/10V 500Ω / 20mA max. or 0/24Vdc ±10% - 30mA max. to drive SSR	
Auxiliary power supply	+24DC ±20% 30mA max. - for external transmitter	
Alarms	Up to 4 alarms programmable as high/low, band alarm, deviation, Loop Break, Sensor Break	
FUNCTIONAL		
Control	PID, ON/OFF single or double action, Split range	
PID functions	PID H/C control, Dead band, overshoot control, manual reset, cycle time, high and low limits, max. control output speed rate, Soft-start, safety output, forcing output, Fuzzy Tuning, Adaptive Tuning	
Servomotor control	PID algorithm for 3 position Servomotor: Increase/Stop/Decrease according to: motor travel time, motor minimum step, Potentiometer	
Set Point	Local + 3 stored Set points, only Remote, Local and Remote, Local with trim, Remote with trim, programmable (Remote Set Point mutally exclusive with frequency input)	
Program	4 programs, 16 segments, 1... 9999 cycles or continuous cycling (OFF)	
Auto/Man station	Integrated, Bumpless operated from keyboard, digital inputs and serial communication	
Signal retransmission	Measuring or Set Point retransmission	
Serial communication	Isolated RS485 with ModBus-RTU (JBUS) protocol MASTER and SLAVE - RS 485 asynchronous/isolated, PROFIBUS DP protocol	
Baud rate	RS 485 (MASTER or SLAVE) Up to 19.200 bit/s; PROFIBUS DP Up to 12Mb/s max. distance 100m (12Mb/s)	
GENERAL		
Power supply	100... 240 Vac (-15...+10%) or 24Vac (-25...+12%) and 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	5VA max.	
Dimensions / Weight	48 x 96 mm (1/8 DIN), depth 110 mm / 250 g approx.	96 x 96 mm (1/4 DIN), depth 110 mm / 500 g approx.
Mounting	Flush in panel in 45 x 92 mm hole	Flush in panel in 92 x 92 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN 61010-1	

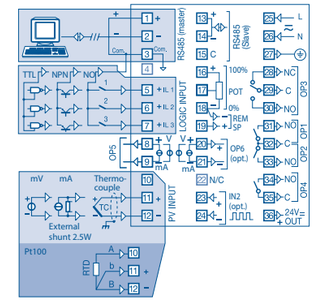
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

X5 / Q5	CODE
POWER SUPPLY	
100... 240 Vac	3
24 Vac/Vdc	5
OUT 1, OUT 2, OUT 3, OUT 4 AND OUT 5	
Relay-Relay-Relay-Relay-logic/analogue	1
Triac-triac-Relay-Relay-logic/analogue	5
SERIAL COMMUNICATION	
Not available	0
Mathematical package (MP)	1
RS485 + MP	5
RS485 Slave+Master+MP	6
Profibus DP+MP	7
RS485 + Profibus DP+MP	8
OPTIONS	
Not available	0
HZ input	1
OUT 6 analogue	4
OUT 6 analogue + Hz	6
OUT 6 analogue + 300Hz input - (X5 only)	7
SPECIAL FUNCTIONS	
Not available	0
4 Programs 16 segments	4
INSTRUCTION MANUAL	
Italian/English	0
Not available	9
FRONT FRAME COLOUR	
Dark grey	0
Dark grey + shunt 0.1%	2
SPECIAL EXECUTION	
Not available	0
Tropicalized	3

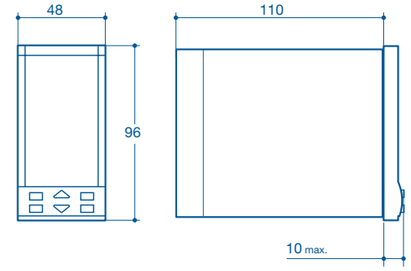
CONNECTIONS

X5 / Q5



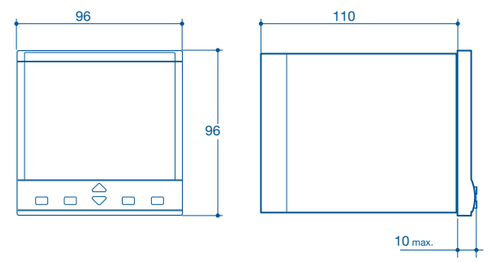
DIMENSIONS

X5



The dimensions are expressed in mm

Q5



The dimensions are expressed in mm

DIN RAIL MOUNTING CONTROLLERS

Versatile and compact

A complete range of modules, which are open to the outside world with “Manager/Gateway” and with a wide range of operator interfaces.
Modules plug and play for the control and the acquisition of analog and digital signals.

DIN RAIL MOUNTING CONTROLLERS

FEATURES		D1	D3		D2	K30	KRD3	K85	TLZ35
Dimensions (mm)	78 x 35					●	●		
	22.5 x 99	●	●		●				
	70 x 85 4 DIN Modules							●	●
Single display 4 digit								●	●
Input	Number of inputs	1	1		2	1	1	1	1
	Universal	●	●		●				
	J-K-S-R-T + IR + PTC-NTC					●	●	●	●
	J-K-S-R-T + IR + Pt100					●	●	●	●
	Digital	1	1		1+2	2	2	2	
	For CT	●							
Relay or voltage for SSR drive outputs		4	4		2+2	5	4	4	2
Analogue current or voltage outputs			1				1		
Measuring or Set Point retransmission			●				●		
Power supply	12 Vac/Vdc								●
	24 Vac/Vdc	●	●		●	●	●	●	●
	100... 240 Vac					●	●	●	●
Control Loops		1	1		2	1	1	1	1
Control	ON/OFF and PID	●	●		●	●	●	●	
	ON/OFF								●
	Servomotor control		●						
RS485 ModBus Slave		●	●		●	●	●	●	
Timer on board		●	●			●	●	●	
Start up		●	●						
Programmer						●	●	●	
CE certification		●	●		●	●	●	●	●
UL approval		●	●		●	●	●	●	●

D1/D2/D3

- 1 OR 2 LOOP CONTROLLERS
- SINGLE OR DOUBLE ACTION
- UP TO 3 ALARMS + RS485 + CT INPUT



FEATURES

INPUTS	D1	D3	D2
Number of inputs	1		2
Universal	Thermocouples: L/J/E (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C/32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32... 3272°F), Ni-NiMo (0... 1100°C / 32... 2012°F), W3, W5 (0... 2000°C / 32... 3632°F) Thermoresistances: PT100 (-99.9... 300.0°C / -99.9... 572.0°F and -200... 600°C / -328... 1112°F) Linear signals: 0/10...50 mV; 0/4...20 mA (shunt) Infrared sensors or special ranges (custom)		
Auxiliary input	Current transformer	--	
Digital inputs	1 voltage digital input		1 voltage digital input (+ 2 programmable)
OUTPUTS			
Up to 4 (D1) Up to 5 (D3) Up to 3 (D2)	OUT 1 and OUT 2: Relay NO, 2A res./250Vac (4A res./120Vac)/SSR, 1A res./250Vac OUT 3: Relay NO, 2A res./150Vac OUT 4: Logic not isolated: 0...5 Vdc OUT 5: (D3 only) 0/4... 20 mA, 15V max.		OUT 1 and OUT 2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac, logic not isolated 0/5 Vdc OUT 3: Logic not isolated 0/5 Vdc
Outputs function	--		NOT
Auxiliary power supply	+24dc, ±20%, 30 mA max. - for external transmitter		--
FUNCTIONAL			
Control	1 Loop PID with overshoot control, ON/OFF single and double action (Heat-Cool)		Double acquisitor, 2 loops PID with overshoot control or ON/OFF single action
PID functions	Dead band, overshoot control, manual reset, cycle time, max. control output speed rate, Soft-start, safety output		
PID algorithm for Servomotor	--	Optional	--
Set Point	Local, Local + 2 stored, with tracking, Stand-by		Local, Local + 2 stored Stand-by
Special functions	Timer, Start-up		--
Alarms	Up to 3		Up to 4
Alarm functions	Sensor break, Latching/Blocking, Loop break, Heater break associated to the timer (if available)		
Tuning	Fuzzy Tuning One shot or Natural Frequency		
Auto/Man station	Integrated, Bumpless operated from digital input and serial communication		
Signal retransmission	--	Measuring or setpoint retransmission (reference value)	--
Serial communication	Isolated RS485 with Modbus RTU protocol		
Baud rate	RS 485 (MASTER or SLAVE) 1200, 2400, 4800, 9600 bit/s 3 wires		
GENERAL			
Power supply	24Vac (-25... +12%), 24Vdc (-15... +25%) / 50/60Hz		
Power consumption	4VA max.		
Front indications	3 red LEDs for DO + 1 green LED for PWR/COM		4 red LED for DO + 1 green LED for PWR/COM
Dimensions / Weight	22.5 x 99 mm, depth 114.5 mm / 159 g approx.		
Mounting	On DIN A rail		
Connections	Power supply and comms: 0.08... 1.5 mm² (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm² (AWG24-AWG12)		
Protection degree	IP20 (terminal block)		
Parameters access	Tramite linea seriale e software di supervisione		
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)		
Operating humidity	5... 95 RH% without condensation		
Conformity	EN61010-1 (IEC1010-1)		

Note: these modules can be inserted into Profibus DP and DeviceNet nets, together with a DX module, with the possibility of automatic reconfiguration.

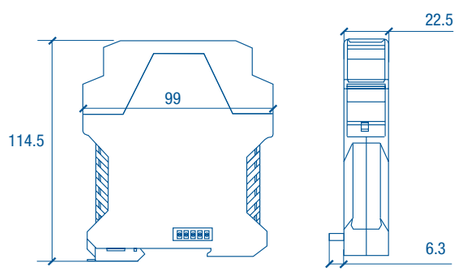
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

D1 / D2 / D3	CODE
POWER SUPPLY	
24 Vac/Vdc	5
OUT 1 E 2	
Relay (D1 only)	0
Relay-Relay	1
Relay-Vdc for SSR driving (D2 only)	2
Triac (D1 only)	3
Vdc for SSR driving-Vdc for SSR driving (Solo D2)	3
Triac-triac (D2 only)	4
Triac-triac (D1 and D3 only)	5
Triac-Vdc for SSR driving (D2 only)	5
SERIAL COMMUNICATION	
RS485	5
OPTIONS 1	
Not available	0
Servomotor (D3 only)	2
Current transformer (D1 only)	3
Analogue Out (D3 only)	5
Servomotor + Analogue Out (D3 only)	7
SPECIAL FUNCTIONS (D1 AND D3 ONLY)	
Not available	0
Start-up + Timer	2
INSTRUCTION MANUAL	
Italian/English	0
Not available	9
OPTIONS 2	
Shunt 1%	0
Shunt 0.1%	2
OPTIONS 3	
Not available	0
Tropicalization	3

DIMENSIONS

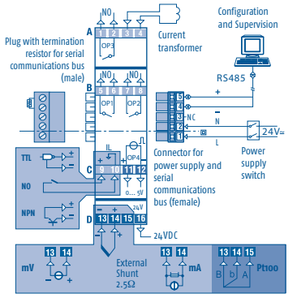
D1/ D2 / D3



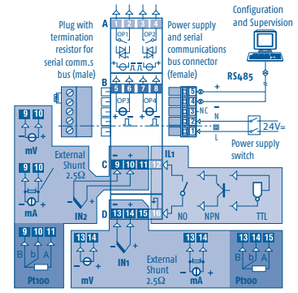
The dimensions are expressed in mm

CONNECTIONS

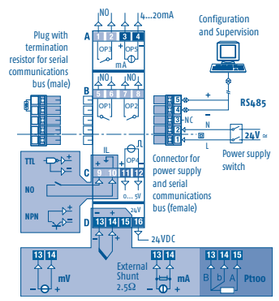
D1



D2

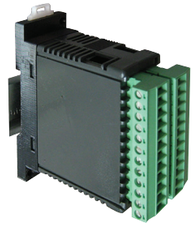


D3



K30

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION



FEATURES

INPUTS	K30
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	±0.5% fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 5	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 5: 12V ±20% 20 mA max. to drive SSR (always available on board)
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75.5 mm or 78.5 mm with plug-in terminals / 180 g approx.
Mounting	On OMEGA DIN A rail
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm²
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

CE

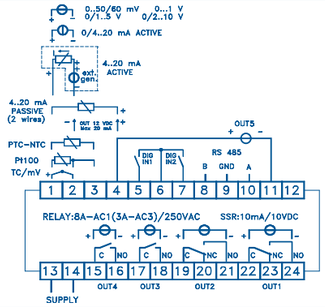
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K30	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1 / OUT 5 SSR (ALWAYS ON BOARD)	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL ModBus	-

CONNECTIONS

K30



DIMENSIONS

K30

The dimensions are expressed in mm

KRD3

- ANALOGUE CONTROL OUTPUT
- 8 SEGMENTS PROGRAMMER
- INDEPENDENT TIMER
- WORKING HOURS COUNTER

evolution

FEATURES

INPUTS	KRD3
Input	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)
Digital input	1, always on board
OUTPUTS	
Up to 4	OUT 1: Relay SPDT 4A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10% or analogue galvanically isolated 0/4... 20 mA, 0/2... 10V (optional)
	OUT 2: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 10.5V min. @ 15mA ±10%
	OUT 3: Relay SPST-NO 2A/240 Vac or voltage to drive SSR 13V max. @ 1mA, 110.5V min. @ 15mA ±10%
	OUT 4 programmable: voltage output to drive SSR 13V max. @ 1mA, 10.5V min. @ 22mA ±10% or transmitter supply
FUNCTIONAL	
Control	PID single or double action, ON/OFF, ON/OFF with Neutral Zone Autotuning and Selftuning algorithms, Overshoot control
Alarms	3 alarms programmable as absolute, deviation, band
Set Point	4 programmable Set Points
Signal retransmission	Measuring or Set Point retransmission
Serial communication	TTL (standard) + RS485 (optional), ModBus RTU protocol
Baud rate	1200... 38400 baud
Working hours counters	A cumulative non-erasable counter and a second one resettable with alarm
Wattmeter function	Instantaneous power, time consumption
EVOogreen	Stand-by mode of display, selectable
Programmer (optional)	Up to 8 segments with guaranteed soak
Timer (optional)	Independent with 5 function modes
GENERAL	
Power supply	24 Vac/Vdc ± 10%, 100... 240 Vac/Vdc -15%/+ 10% (50/60 Hz)
Power consumption	7 VA max
Dimensions / Weight	78 x 35 mm - 200 g
Mounting	On OMEGA DIN A rail or on wall
Connections	16 screw terminals 2.5 mm² (AWG22.... AWG14) fix, plug-in or clamp type
Front protection degree	IP 20
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation
Conformity	EN 61010-1, EN 61326

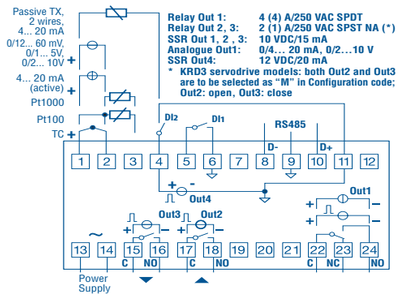
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

KRD3	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, RTD, mA, V, mV/digital input	C
OUT 1	
Relay SPDT 4A	R
Vdc for SSR driving	0
0/4... 20 mA, 0/2... 10V galvanically isolated	I
OUT 2	
Relay SPST-NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
OUT 3	
Relay SPST -NO 2A	R
Vdc for SSR driving	0
Relay SPST-NO 2A for Servomotor	M
Not available	-
OUT 4	
Digital input or digital output or transmitter supply	D
RS485	
Available (Standard)	S
Not available (Optional)	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

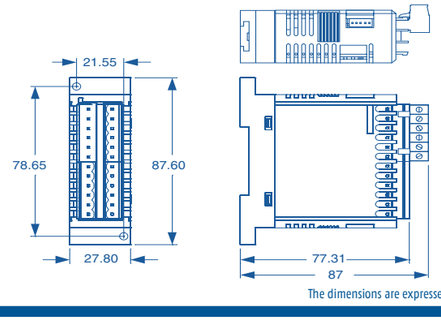
CONNECTIONS

KRD3



DIMENSIONS

KRD3



The dimensions are expressed in mm

K85

- CONTROLLER WITH INDEPENDENT TIMER
- 8 SEGMENTS PROGRAMMER
- WATTMETER FUNCTION

FEATURES

DISPLAY	K85
Single	4 red digit, h 12 mm + 3 LEDs Bargraph
INPUTS	
4 different configurations	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermoresistances: 3 wires Pt 100 (-200.. 850°C / -328... 1562°F)
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Accuracy	± 0.5 % fs + 1 digit; tc S ± 1% fs + 1 digit
Digital inputs	2 for free voltage contacts
OUTPUTS	
Up to 3	OUT 1 and OUT 2: Relay SPDT (8 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR OUT 3: Relay SPST-NO (5 A-AC1, 3 A-AC3 / 250 Vac) or 12V ± 20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.
FUNCTIONAL	
Control	ON/OFF, Neutral Zone, PID single and double action
PID functions	PID H/C control with overshoot control, Selftuning and 2 Autotuning algorithms
Multi Set Point	Up to 4 pre-programmable Set Point
Program	Up to 8 segments with guaranteed soak
Timer	Independent with 4 function modes
Signal retransmission	Set Point
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions / Weight	4 DIN rail module, 70 x 84 mm - depth 60 mm / 230 g approx.
Mounting	On OMEGA DIN A rail
Connections	Screw terminal block 2 x 1 mm²
Front protection degree	IP 40
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

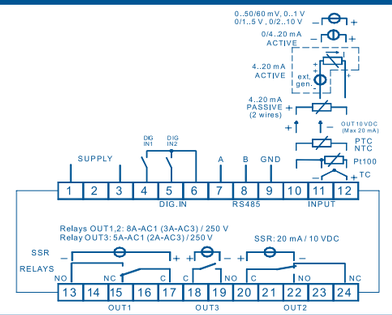
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K85	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	O
Not available	-
OUT 3/ DIGITAL INPUTS	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	O
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL ModBus	-
DIGITAL INPUT	
2 digital inputs	D
Not available	-

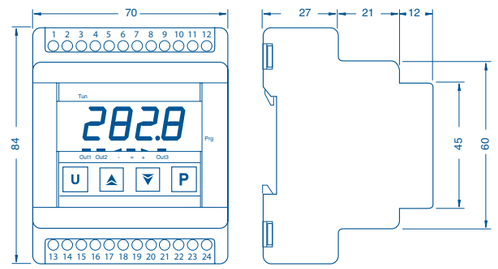
CONNECTIONS

K85



DIMENSIONS

K85



The dimensions are expressed in mm

TLZ35

- THERMOSTAT
- 1 INPUT AND UP TO 2 OUTPUTS

FEATURES

DISPLAY	TLZ35
Single	4 red digit, o blu, h 12 mm
INPUT	
One	Termistori PTC KTY 81-121 (990Ω a 25°C) -50... +150°C (-58... +302°F) oppure Termistori NTC 103AT-2 (10kΩ a 25°C) -50... +109°C (-58... +228°F)
Digital input	1 digital input for free voltage contacts
Accuracy	± 0.5 % fs
OUTPUTS	
Up to 2	OUT 1: Relay SPST-NO 16A -AC1(6A-AC3)/250 Vac or SPDT 16A- AC1(6A-AC3)/250 Vac OUT2: Relay SPDT 8A-AC1 (3A-AC3)/ 250 Vac
Relay operations	100000 operations for relay SPST-NO 16A and SPDT 8A - 50000 operations for relay SPDT 16A
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal buzzer (optional)
Defrosting control	At intervals time by stopping compressor
GENERAL	
Power supply	12, 24 Vac/Vdc, 100... 240 Vac ± 10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	4 DIN rail modules - 70 x 84 x 60 mm / 150 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	On OMEGA DIN A rail
Front protection degree	IP40, for internal use
Operating / storage temperature	0... +50°C (32... +122°F) /-25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

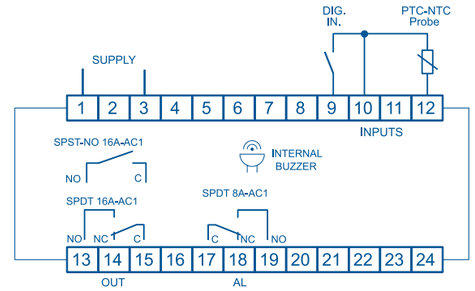
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLZ35	CODE
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
OUT 1	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
OUT 2	
Relay	R
Not available	-
BUZZER (INTERNAL)	
Available	B
Not available	-

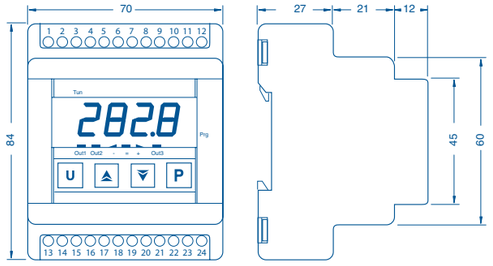
CONNECTIONS

TLZ35



DIMENSIONS

TLZ35



The dimensions are expressed in mm

THERMOSTATS – ANALOGUE CONTROLLERS

Simple, reliable and cost effective !

Digital thermostats in different sizes for every application and analog controllers in the 1/16 DIN – 48 x 48 mm case.

THERMOSTATS – ANALOGUE CONTROLLERS

FEATURES		Z31A	TLZ10		TLZ11	TLZ35	E51A	W09	TCPDE
Dimensions (mm)	78 x 35	•	•		•				
	68 X 35						•		
	48 x 48								•
	75 x 122							•	
	70 x 84 4 DIN rail module					•			
Single display		•	•		•	•	•	•	
Digit		3	4		4	4	3	3	
"Sensitive Touch" keyboard		•							
Input	PTC-NTC	•	•		•	•	•	•	
	J-K								•
	Pt100								•
	Digital				•	•			
Relay or voltage for SSR drive outputs		1	1		2	2	1	1	1
Power supply	12 Vac/Vdc	•	•		•	•	•		
	12... 24 Vac/Vdc	•							
	24 Vac/Vdc		•		•	•			
	115 Vac						•		
	230 Vac						•		
	24... 240 Vac								•
	100... 240 Vac	•	•		•	•		•	
Control	ON/OFF	•	•		•	•	•	•	•
	PD								•
CE certification		•	•		•	•	•	•	•
UL approval		•	•		•	•			
ENEC approval (with "Sensitive Touch" keyboard only)		•							

Z31A

- THERMOSTAT 1 INPUT AND 1 OUTPUT
- "SENSITIVE TOUCH" KEYBOARD

FEATURES

DISPLAY	Z31A
Single	3 red or blue digit, h 15.5 mm
INPUTS	
One	PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
OUTPUTS	
One	OUT 1: Relay SPDT or SPST-NO (16A - 1HP 250V, 1/2HP 125 Vac); EN 61810: 16 (9) A - EN 60730: 10 (4) A UL 60730: 12 A Res., 30 LRA, 5 FLA 12 A max. for plug-in version
Relay electrical life	100000 operations for SPST-NO 16A and SPDT 8A relays 50000 operations for SPDT 16A relay
FUNCTIONAL	
Control	ON/OFF
Acoustic alarm	Internal Buzzer (optional)
GENERAL	
Power supply	12 Vac/Vdc, 12...24 Vac/Vdc, 100...240 Vac ±10% (50/60 Hz)
Power consumption	4 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm or 75.5 mm with plug-in terminals / 120 g approx.
Keyboard	Mechanical or "Sensitive Touch"
Connections	Screw terminal block 2.5 mm² or plu-in connector with screw terminals 2.5 mm²
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) /-25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000- 4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV\ diff. mode; EN61000-4-6: 3V), 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9). Regulation 37/2005/CE (EN13485 air, S, A, 2,- 50°C +90°C wheter used with NTC 103AT11 probe).

HOW TO ORDER

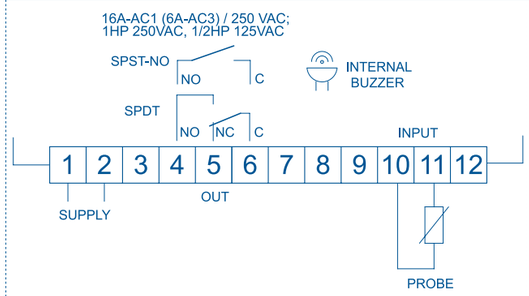
To compose the part number, pls. choose one of the option for each variable

Z31A	CODE
KEYBOARD	
Mechanical	-
Sensitive-Touch (*)	S
POWER SUPPLY	
12 Vac/Vdc	F
12... 24 Vac/Vdc	G
100... 240 Vac	H
OUT 1	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
BUZZER (INTERNAL)	
Available	B
Not available	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Fix screw type (standard)	-
DISPLAY	
Blue	B
Red (standard)	-

(*) Capacitive Touch screen keyboard

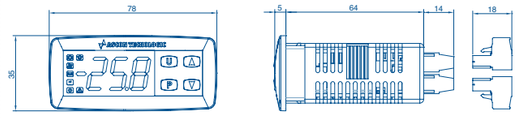
CONNECTIONS

Z31A / Z31SA



DIMENSIONS

Z31A



The dimensions are expressed in mm

TLZ35

- THERMOSTAT
- 1 INPUT AND UP TO 2 OUTPUTS

FEATURES

DISPLAY	TLZ35
Single	4 red digit, o blu, h 12 mm
INPUT	
One	Thermistors PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or Thermistors NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Digital input	1 digital input for free voltage contacts
Accuracy	± 0.5 % fs
OUTPUTS	
Up to 2	OUT 1: Relay SPST-NO 16A -AC1(6A-AC3)/250 Vac or SPDT 16A- AC1(6A-AC3)/250 Vac OUT 2: Relay SPDT 8A-AC1 (3A-AC3)/ 250 Vac
Relay electrical life	100000 operations for relay SPST-NO 16A and SPDT 8A - 50000 operations for relay SPDT 16A
FUNCTIONAL	
Regolazione	ON/OFF
Allarme acustico	Internal buzzer (optional)
Controllo sbrinamento	At intervals time by stopping compressor
GENERAL	
Power supply	12, 24 Vac/Vdc, 100... 240 Vac ± 10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	4 DIN rail modules - 70 x 84 x 60 mm / 150 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	On OMEGA DIN A rail
Front protection degree	IP40, for internal use
Operating / storage temperature	0... +50°C (32... +122°F) /-25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

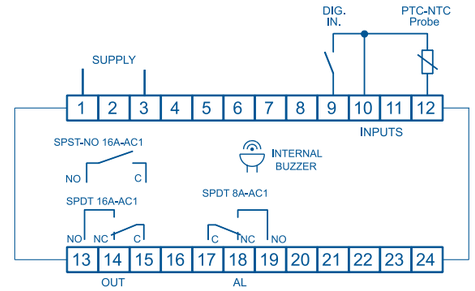
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLZ35	CODE
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac	H
OUT 1	
Relay SPDT 16A-AC1	S
Relay SPST NO-16A-AC1	R
OUT 2	
Relay	R
Not available	-
BUZZER (INTERNAL)	
Available	B
Not available	-

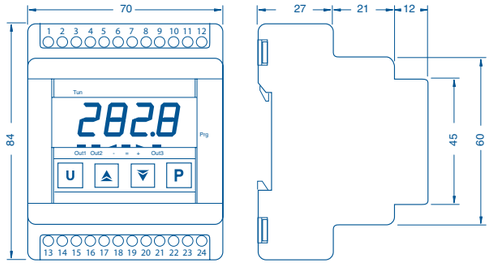
CONNECTIONS

TLZ35



DIMENSIONS

TLZ35



The dimensions are expressed in mm

E51A

- THERMOSTAT
- 1 INPUT AND 1 OUTPUT
- SMALL DIMENSIONS

FEATURES

DISPLAY	E51A
Display	3 red or blue digit, h 14 mm
INPUT	
One	PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
OUTPUT	
One	OUT 1: Relay SPDT or SPST-NO (16A-AC1, 6A-AC3 250 Vac, 1 HP 250 Vac, 1/2HP 125 Vac); 12 A max. for plug-in version
Relay electrical life	100000 operations for relay SPST-NO 16A and SPDT 8A, 50000 operations for relay SPDT 16A
FUNCTIONAL	
Control	ON/OFF
GENERAL	
Power supply	12 Vac/Vdc, 115, 230 Vac ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	68 x 35 mm - depth 50 mm / 105 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	Flush in panel in 58 x 25 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000- 4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply, inputs, outputs; EN61000-4-5: supply 2KV com. mode, 1 KV\ diff. mode; EN61000-4-6: 3V), 2006/95/CE (EN 60730-1, EN 60730-2-7, EN 60730-2-9)

CE

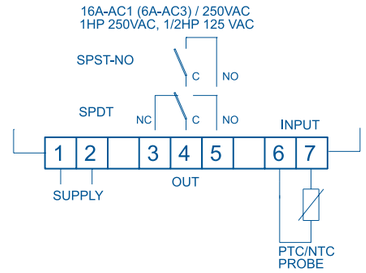
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

E51A	CODE
POWER SUPPLY	
12 Vac/Vdc	F
115 Vac	C
230 Vac	D
INPUT	
PTC	P
NTC	N
OUT 1	
Relay SPDT 16A-AC1	S
Relay SPST-NO-16A-AC1	R

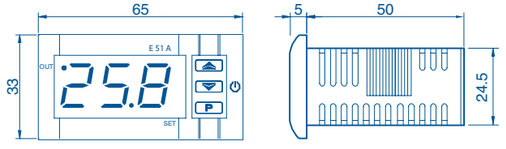
CONNECTIONS

E51A



DIMENSIONS

E51A



The dimensions are expressed in mm

W09

- THERMOSTAT 1 INPUT AND 1 OUTPUT
- WALL MOUNTING

FEATURES

DISPLAY	W09
Single	3 red or blue digit, h 15.5 mm
INPUTS	
One	Thermistors PTC KTY 81-121 (990Ω at 25°C) -50... +150°C (-58... +302°F) or Thermistors NTC 103AT-2 (10kΩ at 25°C) -50... +109°C (-58... +228°F)
Accuracy	±0.5% fs + 1 digit
OUTPUTS	
One	OUT1: Relay SPDT 8A, 1/2HP 250V, 1/3 HP 125 Vac - EN 61810: 8 (3) A - EN 60730: 8 (4) A - UL 60730: 10A Res., 12 LRA, 2 FLA
FUNCTIONAL	
Control	ON/OFF
Defrosting control	At intervals time by stopping compressor
Acoustic alarm	Internal Buzzer (optional)
GENERAL	
Power supply	100...240 Vac ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	75 x 122 mm - depth 34 mm / 120 g approx.
Connections	Screw terminal block for cables 0.2...1.5 mm² / AWG 24...16
Mounting	On wall. Cables outlet: on the back side or lateral side by PG9 cable gland
Front protection degree	IP40
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive 2004/108/CE (EN55022: class B; EN61000- 4-2: 8KV air, 4KV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2KV supply and relay outputs, 1KV inputs; EN61000-4-5: supply 2KV com. mode, 1 KV\ diff. mode; EN61000-4-6: 3V); Directive 2006/95/CE (EN 60730-1, EN 60730-2-9). Regulation 37/2005/CE (EN13485 air, S, A, 2,- 50°C +90°C wheter used with NTC 103AT11 probe). Regulation 37/2005/CE (EN13485 air, S, A, 2,- 50°C +90°C wheter used with NTC 103AT11 probe).

CE

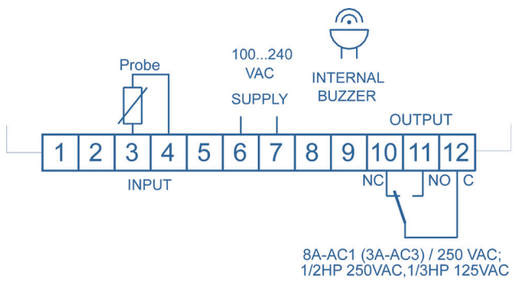
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

W09	CODE
POWER SUPPLY	
100... 240Vac	H
OUT 1	
Relay SPDT-8A-AC1	R
BUZZER (INTERNAL)	
Available	B
Not available	-
CONNECTION	
Screw type	-
DISPLAY	
Blue	B
Red (standard)	-

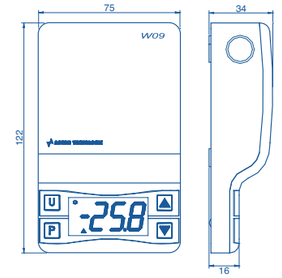
CONNECTIONS

W09



DIMENSIONS

W09



The dimensions are expressed in mm

TCPDE M

- ANALOGUE CONTROLLER
- ON/OFF AND PD CONTROL
- RANGES FROM 100 TO 1200°C

FEATURES

INPUTS	TCPDE M
2 different configurations	Thermocouples J, K
	Thermoresistances Pt 100 IEC
Accuracy	±5% f.s.
OUTPUT	
One	OUT 1: Relay 8A-AC1 (3A-AC3)/250Vac or 20 mA/12 Vdc to drive SSR
FUNCTIONAL	
Control	ON/OFF, PD
Ranges	Ranges available from 100 to 1200°C:
	0... 100°C (Pt100 only)
	0... 200°C
	0... 250°C
	0... 350°C
	0... 600°C
	0... 1000°C
	0... 1100°C
	0... 1200°C
GENERAL	
Power supply	24... 240 Vac ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	48 x 48 mm (1/16 DIN) - depth 89 mm / 200 g approx.
Connections	Faston 6.3 mm terminals or Octal socket
Mounting	Flush in panel in 45.5 x 45.5 mm hole
Front protection degree	IP 54, mounted on panel with gasket
Operating / storage temperature	0... +50°C (32... +122°F) / -25... +60°C (-13... +140°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326), Directive BT 2006/95/CE (EN 61010-1)

HOW TO ORDER

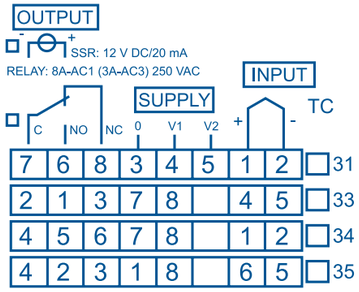
To compose the part number, pls. choose one of the option for each variable

TCPDE M	CODE
RANGES	
0... 100°C (PT100 only)	1
0... 200°C	2
0... 350°C	3
0... 600°C	4
0... 1000°C	6
0... 1200°C	7
0... 250°C	8
0... 1100°C	9
POWER SUPPLY	
24... 240 Vac	U
INPUT	
J	J
K	K
PT100	P
OUTPUT	
Relay	R
0... 12 V for SSR driving	T
WIRING DIAGRAM	
Thermocouples	31
Thermoresistances (*)	32
Thermocouples	33
Thermocouples	34
Thermocouples	35
CONNECTIONS	
Faston	F
Octal	O
CONTROL	
ON/OFF	O
PD	P

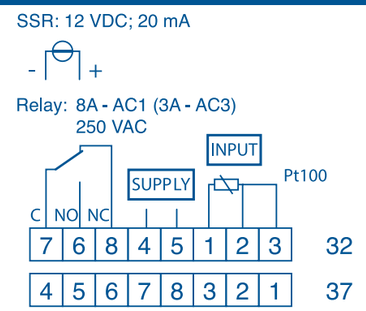
(*) max. range for PT100 input: 350°C

CONNECTIONS

TCPDE M - TC INPUT

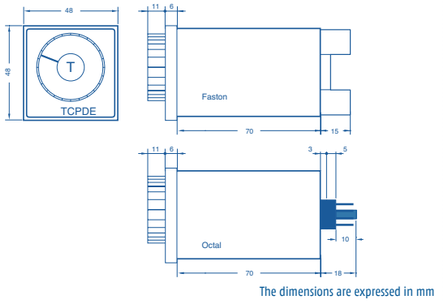


TCPDE M - PT100 INPUT



DIMENSIONS

TCPDE M



The dimensions are expressed in mm

SPECIAL CONTROLLERS AND “CUSTOM”

The only limit is your imagination...

Our production program includes many models that can be used in specific applications such as controllers for Peltier cells, differential controllers, controllers dedicated to the bakery sector and also “custom” products to meet specific customer requirements.

SPECIAL CONTROLLERS AND "CUSTOM"

CARATTERISTICHE		KR7	KM7		KX7	KRD7	TC030	TLK33
Dimensions (mm)	78 x 35	●				● (on DIN rail)		●
	48 x 48		●					
	48 x 96				●			
	72 x 144						●	
Single display								●
3 dynamic colour double Display		●	●		●			
Triple Display							●	
Digit		4	4		4		3+3+4	4
Inputs	J-K						●	
	Universal	●	●		●		●	
	TC J,K,S, IR + PT100							●
	TC J,K,S, IR + PTC, NTC							●
	0/4... 20mA							●
	0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V							●
Relay outputs		4	4		4	4	7	
Voltage output 12... 24 Vdc and Vdc for SSR driving (10mA/Vdc)		4	4		4	4		2
Counter-reacted PWM output for 24 Vdc motor speed control		●	●		●	●		
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc	●	●		●	●		
	24, 115, 230 Vac						●	
	12... 24 Vdc							●
Control	PID single and double action, ON / OFF, Neutral Zone, Autotuning, Selftuning, evoTune, Overshoot control	●	●		●	●		
	ON/OFF						●	
	Peltier cells: double action PID, Autotuning algorithms FAST, Selftuning, Fuzzy overshoot control							●
RS485		●				●	●	●
8 programs							●	
CE certification		●	●		●	●	●	●

KR7/M7/X7/RD7

- 7 SPEED SERIES
- TEMPERATURE CONTROLLERS/ PROGRAMMERS WITH CONVEYOR SPEED FEEDBACK CONTROL

FEATURES

DISPLAY	KR7	KM7	KX7	KRD7
Main display: Dual LED 3 dynamic colours: red, green and amber or 1 fix colour (programmable)	4 digit h 10.9 mm	4 digit h 15.5 mm	4 digit h 15.5 mm	--
Secondary display:	4 green digit h 6 mm	4 green digit h 7.6 mm	4 green digit h 10 mm	
Barghaph	--	--	21 segments Bargraph	
INPUTS				
Universal (in 2 different configurations)	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermoresistances: 3 wires Pt 100 and 2 wires Pt 1000 (-200... 850°C/-328... 1562°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V			
	Thermocouples: J (-50... +1000°C/-58... 1832°F), K (-50... +1370°C/-58... 2498°F), S/R (-50... +1760°C/-58...3200°F), T (-70... +400°C/-94... 752°F) Infrared sensors: J or K Thermistors: PTC KTY81-121 (-55... +150°C/-67... 302°F), NTC 103 AT2 (-50... +110°C/-58... 230°F) Linear signals: 0/12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V			
Accuracy	± 0.5% span ±1 digit, (±1% span ±1 digit for T/c S type)			
Digital inputs	1 free voltage contact + 1 (available when I/O 4 = DI2) programmable as tension (24 Vdc) or as free voltage contact			
OUTPUTS				
1 PWM output + 3 control output	**OUT PWM:** with feedback control for motor speed. 24 VDC max 4 A. **OUT1 and Out2:** Relay SPST-NO 2 A/240 VAC ; voltage output for SSR driving SSR 13 V max. @ 1 mA, 10.5 V min. @ 15 mA ±10% or relay SPST-NO 2 A/ 240 VAC (for servomotor control) **OUT3 programmable:** Voltage output for SSR driving SSR 13 V max. @ 1 mA, 10.5 V min. @ 22 mA ±10% or transmitter power supply or 2nd Digital Input			
Auxiliary supply	12 Vdc/20 mA max.			
FUNCTIONAL				
Control	PID single or double action, On/Off, On/Off with Neutral Zone			
Alarms	3 alarms configurable as absolute, deviation, band			
PID functions	PID control with overshoot control. Autotune, Selftune and evoTune			
Multi Set point and Programmer (optional)	4 Set Points selectable + 4 speed selectable individually or as a recipe Up to 8 segments with "guaranteed soak"			
Timer (optional)	Independent with 5 operating modes			
Working hours counters	With 2 simultaneous functions: cumulative non-erasable and resettable with alarm			
Evogreen	Time based Display switch-off, selectable			
Serial communication	RS485 with ModBus-RTU (JBUS) protocol	TTL ModBus		RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable	--		1200... 38400 baud, programmable
GENERAL				
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ±10% (50/60 Hz)			
Power consumption	7 VA approx.			
Dimensions / Weight	78 x 35 mm - depth 64 mm or 78.5 mm with plug in terminals/ 180g	48 x 48 mm - depth 63 mm / 125g	48 x 96 mm - depth 76 mm / 260g	78 x 35 mm - depth 64 mm or 78.5 mm with plug in terminals/ 180g
Keyboard	Mechanical			--
	Flush in panel in 71 x 29 mm hole	Flush in panel in 45 x 45 mm hole	Flush in panel in 45 x 93 mm hole	On OMEGA DIN rail
Connections	Extractable terminals (optional) or fix with screws 2 x 1 mm²			
Front protection degree	IP 65, mounted on panel with gasket			--
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)			
Operating humidity	20... 85 RH% without condensation			
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive LT 2006/95/CE (EN 61010-1)			

CE

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

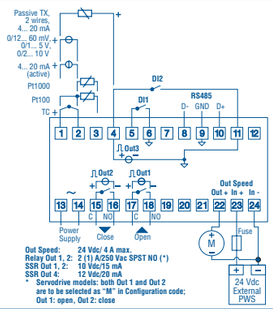
KR7 / KM7 / KX7 / KRD7	CODE
VERSION	
Controller	-
Controller + Timer	T
Controller + Timer + Programmer	P
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac	H
INPUT	
TC, IR sensors, PT100,PT1000, mA, V, mV + DI1	C
TC, IR sensors, PTC, NTC, mA, V, mV + DI1	E
PWM OUT	
PWM output with feedback control for motor speed 24 VDC max 4 A	S
OUT 1	
Relay SPST-NO 2A for Servomotor driving	M
Relay SPST NO 2A AC1	R
Vdc x SSR	0
OUT 2	
Relay SPST-NO 2A for Servomotor driving	M
Relay SPST-NO 5A-AC1	R
Vdc x SSR	0
Not available	-
OUT 3/ DIGITAL INPUT	
Vdc x SSR/ Transmitter supply/ Digital input DI2	D
SERIAL COMMUNICATION	
RS485 + TTL Modbus (KR7 and KRD7 only)	S
TTL ModBus	-
CONNECTION	
Plug-in screw type	E
Plug-in screw type, fix part only	N
Clamp type	M
Fix screw type (standard)	-

DIMENSIONS

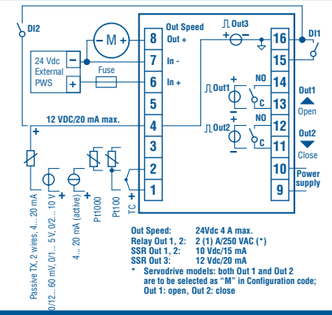
See KUBE series: pages 49, 53 and 59.

CONNECTIONS

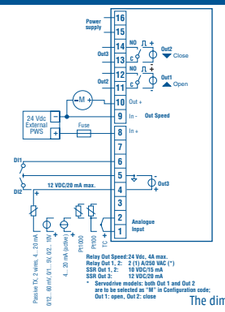
KR7/ KRD7



KM7



KX7



The dimensions are expressed in mm

TC030

- CONTROLLER FOR COOKING OVENS
- UP TO 8 PROGRAMS
- UP TO 4 INPUTS FOR TOP, FLOOR STEAMER AND AUXILIARY PROBE

FEATURES

DISPLAY	TC030
Triple	2 temperature indications: 3 red digit, h 14 mm 1 time indication: 4 red digit, h 7 mm
INPUTS	
Up to 4: Top, Floor, Steamer and auxiliary probe	Thermocouples: J/K (-50 ... +999 °C/-58 ...+999 °F)
Digital inputs	3, for free voltage contacts
OUTPUTS	
Up to 7	OUT STEAM: 1 Relay SPST-NO (16 A-AC1, 6 A-AC3 / 250 Vac) Other OUTS: Relay SPST-NO (8 A-AC1, 3 A-AC3 / 250 Vac)
FUNCTIONAL	
Control	ON/OFF
Programs	8 cooking programs
Internal clock lifetime memory without power supply	Approx. 7 years by means of internal battery
Serial communication	RS485 isolated, ModBus RTU
Baud rate	2400... 38400 baud
GENERAL	
Power supply	230 Vac ± 10% (50/60 Hz)
Power consumption	9 VA approx.
Dimensions / Weight	72 x 144 mm, depth 77 mm / 600 g approx.
Mounting	Flush in panel in 68 x 139 mm hole
Connections	Screw terminal block 2.5 mm²
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation

CE

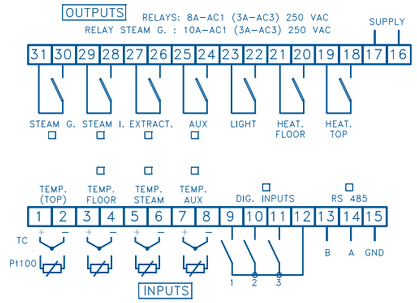
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TC030	CODE
INPUT	
J-K	C
POWER SUPPLY	
230 Vac	D
AUXILIARY PROBE INPUT	
Available	A
AUXILIARY OUTPUT	
Relay	R
STEAM PROBE INPUT	
Available	V
SERIAL COMMUNICATION	
RS485	S
3 DIGITAL INPUTS	
Available	I

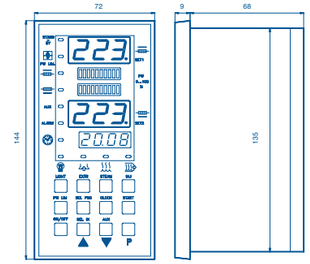
CONNECTIONS

TC030



DIMENSIONS

TC030



The dimensions are expressed in mm

TLK33

- PELTIER CELLS CONTROLLER
- PID CONTROL
- UP TO 2 OUTPUTS
- RS485

FEATURES

DISPLAY	TLK33
Single	4 red digit, h 12 mm
INPUTS	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200.. 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts
Accuracy	± 0,5% span ±1 digit, Tc S :±1% span ±1 digit
OUTPUTS	
Up to 2, in voltage to direct drive Peltier cells	12... 24 Vdc (equal to power supply) to direct drive Peltier cells max. 7A; up to 2 alarm outputs in voltage for SSR driving (10mA/ 10Vdc)
Auxiliary supply	12 Vdc / 20 mA max.
FUNCTIONAL	
Control	PID dual action, Autotuning FAST, Selftuning algorithms, Fuzzy overshoot control
Set Point	4 Set Points programmable
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	12... 24 Vdc ±10%
Power consumption	4 VA approx.
Dimensions / Weight	78 x 35 mm - depth 75.5 mm / 130 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	Flush in panel in 71 x 29 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	20... 85 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

HOW TO ORDER

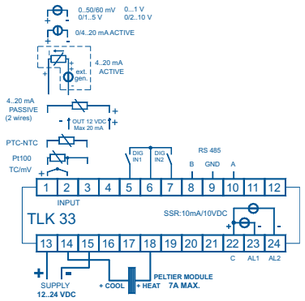
To compose the part number, pls. choose one of the option for each variable

TLK33	CODE
POWER SUPPLY	
12... 24 Vdc	G
INPUT	
PT100 + TC (J,K,S,IRS), mV	D
PTC,NTC,mV + TC (J,K,S,IRS)	E
0/4... 20mA	I
0/1... 5V, 0/2... 10V	V
CONTROL OUTPUTS (2 FOR SSR)	
12... 24 Vdc for Peltier cells (7A max)	0
OUT AL1	
Vdc for SSR driving	0
Not available	-
OUT AL2	
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485 + 2 digital inputs	S
Not available	-
DIGITAL INPUT	
Available	I
Not available	-

TLK33 : When the RS485 is required, 2 digital inputs are always on board too.

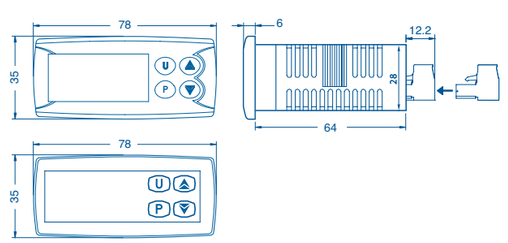
CONNECTIONS

TLK33



DIMENSIONS

TLK33



The dimensions are expressed in mm

PAC SYSTEMS

The right solution for every application!

New generation of programmable controllers (PAC – Programmable Automation Controller) able to manage control, PLC functions, acquisition, monitoring, integration and remote control of machines and small industrial plants.
A single solution available in a compact, modular and distributed version.

PAC SYSTEMS

FEATURES		NP4		AC3NP
Dimensions (mm)	6 DIN module (105 x 110 mm)	•		
	8 DIN module(152 x 110 mm)			
	83 x 159			•
Inputs (16 bit)	Universal (mA, V, TC, RTD, NTC, Potentiometer)	4		2 (optional)
	Hi level (mA, V)			6+2 (optional)
	Digital	18+36 (*)		8 + 32 (**)
Outputs	Relay outputs / for SSR driving	4+8 (*)		8+32 (**)
	Analog outputs current or voltage	4+8 (*)		4
	Digital outputs	18+36 (*)		
Power supply	24 Vdc	•		•
Control	ON / OFF, PID with advanced Autotuning	•		•
	Servomotor control	•		•
Processor 32 bit		•		•
16 MB RAM, 2MB program and 64 KB flash				•
16 MB Flash, 32 MB SDRAM, 128 kB MRAM		•		
Micro USB		• (AB type)		•
Real Time Clock		•		•
Ethernet port (communication, programming, configuration)		•		•
RS485 port		•		•
RS232 port		1		1
Modbus RTU (Master/Slave) protocol, Modbus TCP Server, ASCII		•		•
Profibus DP				
Programming languages : IL, ST, FBD, LD, SFC, CFC		•		•
Advanced libraries dedicated to process control		•		•
CE certification		•		•
UL approval (listed)				

(*) expandable with modules of the exPAC family
(**) expandable with modules of the MP-D family

NP4 NANOPAC

- COMPACT PROGRAMMABLE CONTROLLER (NANOPAC)
- ON BOARD I/O
- EXPANSION CAPABILITIES

FEATURES

INPUTS	NP4
4 Universal Analogue	Configurable between: 0/1... 5 V, 0/2... 10 V, 0/4... 20 mA, TC (J, K, L, N, R, S, T), PT100 (2 wires), PT1000, NTC (103AT-2), Potentiometer, 5 V Ratiometric
	16 bit resolution
	Accuracy 0,1% of span (linear), 0,2% (temperature)
	Input Impedance >100 kΩ, <200 Ω (mA)
	Insulation 800 V between analogue channels and power supply, digital I/Os and serial comms ports (insulated version)
8/16 + 2 Digital	8 (16 I/O mix) sink type IEC611131-2 type 3
	2 input sink type IEC61131-2 type 3 for counters and frequency (5 kHz max)
	Protection: reverse polarity and overvoltage
	Insulation 800 V between digital channels, power supply, analogue I/Os and serial comms ports (isolated version)
OUTPUTS	
0/2/4 Analogue	Configurable 0/1... 5 V, 0/2... 10 V, 0/4... 20 mA
	12 bit resolution
	Accuracy 0.1 % full scale
	Insulation 800 V between analogue outputs and power supply, analogue inputs, digital I/Os and serial comms ports (isolated version)
8/16 Digital	8 (16 I/O mix) high-side output 0.7 A each
	Insulation 800 V between digitals and power supply, analogue I/Os and serial comms ports (isolated version)
4 Relay/SSR Drive	Relay 2 A, 240 Vac, or SSR Drive max 20 mA, 12V
	Protection: Overvoltage
	Insulation 2500V (Relay), 800V SSR Drive with respect power supply, analogue & digital I/Os and serial comms ports (isolated version)
SERIAL PORTS AND COMMUNICATION	
Ethernet	Ethernet port 10/100 MB
0/1/2 Serial	1 RS232/485 + 1 RS485 (optional/ insulated)
USB	Micro USB AB type (HOST)
Protocol	Modbus TCP Server, Modbus RTU (Master e Slave), ASCII
FUNCTIONAL	
Processor	ARM Cortex M7 32 bit, 216 MHz
Memory	16 MB Flash, 32 MB SDRAM, 128 kB MRAM
Programming	Standard languages IEC 61131-3 compliant: IL, ST, FBD, LD, SFC, CFC
Real Time Clock	Back-up battery on board (rechargeable)
GENERALS	
Power Supply	24 Vdc (-15... +25%)
Power consumption	12 W
Dimensions / Weight	105 x 110 x 60 mm (WxHxD) 6 DIN module / 512 g
Mounting	On Omega DIN A rail
Protection	IP 20
Operating/storage temperature	-20... 50 °C (-4... 122 °F) / -40... 70 °C (-40... 158 °F)
Operating Humidity	5... 95 RH% without condensation

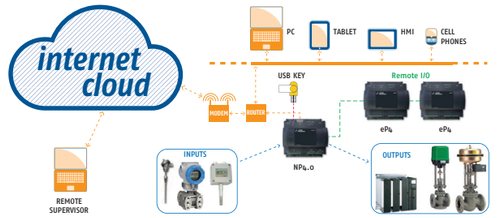
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

NP4	CODE
DISPLAY	
Without display	-
Display LCD 128 x 64 dot (not available yet)	D
DIGITAL OUTPUTS	
Not provided	-
2 Relay DO + 2 SSR drive DO	M
4 Relay DO	R
4 SSR drive DO	S
ANALOGUE INPUTS	
Not provided	-
4 universal inputs	4
4 universal & ratiometric inputs	5
ANALOGUE OUTPUTS	
Not provided	-
2 ch. not isolated	2
2 isolated modules with 2 analogue ch. each	4
DIGITAL INPUTS	
8DI + 8DO + 2 DI for counter and Frequency	88
16 Digitals (config. as IN or OUT) + 2 DI counter/Frequency	16
FIELDBUS	
Ethernet	E
COMMUNICATION PORTS	
Not available	--
RS232/485	1S
RS232/485 isolated	1I
RS232/485 + RS485 isolated	2S
RS232/485 isolated + RS485 isolated	2I
RS485 isolated	4I
CASE COLOUR	
Grey	G
White	W

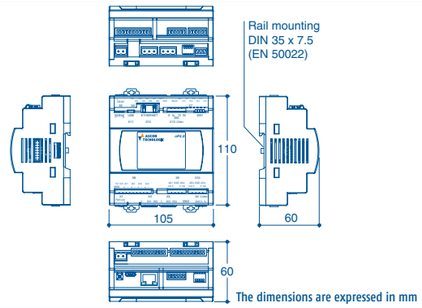
CONNECTIONS

NP4



DIMENSIONS

NP4



The dimensions are expressed in mm

EP4 EXPAC

- EXPANSION UNITS FOR SIGMAPAC CONTROLLERS

FEATURES

INPUTS	EP4
0/4 Universal Analogue	Configurable between: 0/1... 5 V, 0/2... 10 V, 0/4... 20 mA, TC (J, K, L, N, R, S, T), PT100 (2 wires), PT1000, NTC (103AT-2), Potentiometer, 5 V Ratiometric
	16 bit resolution
	Accuracy 0,1% of span (linear), 0,2% (temperature)
	Input Impedance >100 kΩ, <200 Ω (mA)
	Insulation 800 V between analogue channels and power supply, digital I/Os and serial comms ports (insulated version)
8/16 + 2 Digital	8 (16 I/O mix) sink type IEC611131-2 type 3
	2 input sink type IEC611131-2 type 3 for counters and frequency (5 kHz max)
	Protection: reverse polarity and overvoltage
	Insulation 800 V between digital channels, power supply, analogue I/Os and serial comms ports (isolated version)
OUTPUTS	
0/2/4 Analogue	Configurable 0/1... 5 V, 0/2... 10 V, 0/4... 20 mA
	12 bit resolution
	Accuracy 0.1 % full scale
	Insulation 800 V between analogue outputs and power supply, analogue inputs, digital I/Os and serial comms ports (isolated version)
8/16 Digital	8 (16 I/O mix) high-side output 0.7 A each
	Insulation 800 V between digitals and power supply, analogue I/Os and serial comms ports (isolated version)
4 Relay/SSR Drive	Relay 2 A, 240 Vac, or SSR Drive max 20 mA, 12V
	Protection: Overvoltage
	Insulation 2500V (Relay), 800V SSR Drive with respect power supply, analogue & digital I/Os and serial comms ports (isolated version)
SERIAL PORTS AND COMMUNICATION	
Communication port	RS485 (optional/isolated)
Protocol	Proprietary protocol for local expansion, Modbus RTU (Slave)
FUNCTIONAL	
Processor	ARM Cortex 32 bit
GENERALS	
Power Supply	24 Vdc (-15... +25%)
Power consumption	12 W
Dimensions / Weight	WxHxD. 108 x 110 x 60 mm (6 DIN module) / 512 g
Mounting	On Omega DIN A rail
Protection	IP 20
Operating/storage temperature	-20... 50 °C (-4... 122 °F) / -40... 70 °C (-40... 158 °F)
Operating Humidity	5... 95 RH% without condensation

CE

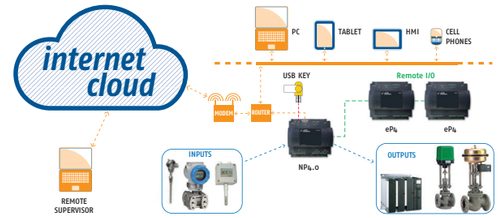
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

SIGMA2 - EP4	CODE
DISPLAY	
Without display	-
DIGITAL OUTPUTS	
Not provided	-
2 Relay DO + 2 SSR drive DO	M
4 Relay DO	R
4 SSR drive DO	S
ANALOGUE INPUTS	
Not provided	-
4 universal inputs & raziometric	5
ANALOGUE OUTPUTS	
Not provided	-
2 ch. not isolated	2
4 ch (2 off 2 ch. modules isolated from each other)	4
DIGITAL INPUTS	
Not provided	--
8DI + 8DO + 2 DI for counter and Frequency	88
16 Digitals (config. as IN or OUT) + 2 DI counter/Frequency	16
FIELDBUS	
Ethernet	E
COMMUNICATION PORTS	
RS485 isolated with Modubus RTU Slave	4I
CASE COLOUR	
Grey	G
White	W

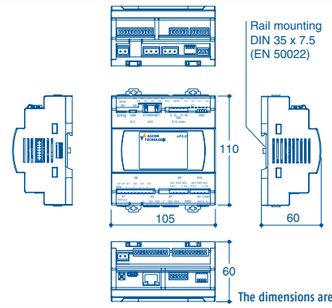
CONNECTIONS

EP4



DIMENSIONS

EP4



The dimensions are expressed in mm

XP4 EXPAC

- REMOTE EXPANSION UNITS FOR SIGMAPAC CONTROLLERS

FEATURES

INPUTS	XP4
0/4 High level Analogue	Configurable between: 0... 5 V, 0... 10 V, 0/4... 20 mA
	12 bit resolution
	Accuracy: 0.1%
	Input Impedance >100 kΩ; < 50 Ω (mA)
0/8 Temperature Analogue	Configurable PT1000, NTC 103AT-2
	0.1°C resolution
	Accuracy: 0.3 % PT1000 0.5% NTC
4/8 Digital	Free voltage contacts or 12... 48 Vac/ Vdc or 90... 240 Vac
	Protection: reverse polarity and overvoltage
	Insulation for voltage signals only
OUTPUTS	
0/2 Analogue	0... 10 V
	11 bit resolution
	Accuracy 0.3 % full scale (V)
0/2 Relay/ SSR Drive/ SSR Vac	Relay 8 A SPDT, SSR Drive 12 Vdc or SSR 1A Vac
0/6 Relay	Relay 2 A SPST-NO
SERIAL PORTS AND COMMUNICATION	
Communication port	RS485 (isolated)
Protocol	Modbus RTU (Slave)
FUNCTIONAL	
Processor	ARM Cortex M3 32 bit
GENERAL	
Power Supply	24 Vac/ Vdc (± 10%) 50 Hz
Power consumption	400 mA (Vdc)
Dimensions / Weight	WxHxD. 108 x 110 x 60 mm (6 DIN module) / 512 g
Mounting	On Omega DIN A rail
Protection	IP 20
Operating/storage temperature	0... 55 °C (32... 131 °F) / -20... 60 °C (-4... 140 °F)
Operating Humidity	5... 85 RH% without condensation

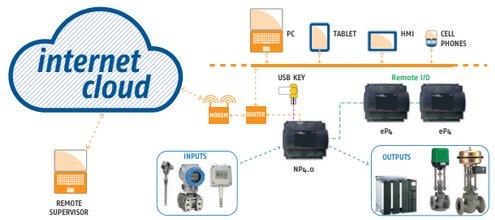
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

SIGMA2 - XP4	CODE
DISPLAY	
Without display	-
DIGITAL OUTPUTS	
Not provided	-
6 relè SPST-NO 2A + 2 relè SPDT-NO 8A	R
ANALOGUE INPUTS	
Not provided	-
4 HL analogue inputs	4
8 temperature analogue inputs: PT1000, NTC	8
4 HL analogue inputs + 8 temperature analogue inputs: PT1000, NTC	F
ANALOGUE OUTPUTS	
Not provided	-
2 analogue channels 0... 10 V (not isolated)	2
DIGITAL INPUTS	
Not provided	--
8 free voltage DI	8-
4 free voltage DI + 4 DI 12... 48 Vac/Vdc	8L
FIELDBUS	
RS485 - Modbus RTU Slave	M
COMMUNICATION PORTS	
RS485 isolated with Modubus RTU Slave	4I
CASE COLOUR	
Grey	G
White	W

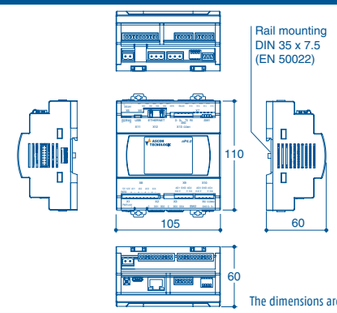
CONNECTIONS

XP4



DIMENSIONS

XP4



The dimensions are expressed in mm

AC3NP

- MULTIFUNCTION PROGRAMMABLE CONTROL SYSTEM
- MULTI LOOP
- PRE-PROGRAMMED HMI

FEATURES

INPUTS	AC3NP
6 Analogue	6 programmable, 0...10V, 0/1...5V, 0...1V , 0/4...20mA 2 programmable, ±10V, ±5V, ±1V , 0/4...20mA
	Resolution: 16 bit - Accuracy: 0.1% of span - Input impedance >100k (V); 300 (mA)
	Isolamento: 800 V rispetto alimentazione e logica
2 Analogue, universal	2 configurabili: ±15mV, ± 35mV, ±50mV, ±100mV, ±300mV, ±1.25 V ad alta impedenza, TC (L, J, T, K, S, R, N), Pt100, Pt1000 e potenziometro (0.1... 10kΩ)
	Risoluzione: 16 bit - Accuratezza: 0.1% dello span - Impedenza di ingresso >10MΩ (V)
	Insulation 800 V between power supply and logic 40 Vpp between two channels (differential inputs)
8+32 Digital	8 + 32 (with expansion units) 24 VDC (ON: 5...30V, OFF: 0..3V) or 8 + 8/16 max.at 120 VAC
	Max. input frequency 80 Hz for counter input
	Sink type
	Reverse polarity protection, overvoltage
	Insulation 800 V between power supply and logic
OUTPUTS	
0/2/4 Analogue	0/2/4 programmable (option) ±10 V (±25 mA max.), 0/4... 20 mA
	Resolution 13 bit
	Accuracy: 0.1% of span
	Insulation 800 V between power supply and logic
8+32 Digital	8 + 32 (with expansion units) 24VDC, 0.5 A or 8 + 8/16 relays (2A, 240 VAC, NA)
	Source type (PNP)
	Overvoltage and short circuit protection
	Insulation 800V channels - power supply
HMI: P04	
Processor	ARM 9 at 32 bit
LCD	TFT resistive type, 4.3", 16/9, back lighted LED
Resolution	480 x 272
Colours	262.000
Interfaces	Ethernet 10/100-T, USB 2.0
FUNCTIONAL	
Processore	ARM 32 bit
Memory	16 MB of RAM system, application memory max. 2 MB internal 64 kB redundant FLASH memory
Programming languages	IL, ST, FBD, LD, SFC, CFC
Standard	IEC61131-3
Real time clock	on board
Minimum time of cycle execution	≥5ms (10ms tipical)
Serial ports	Ethernet + RS485 + RS232/485
Protocols	Modbus RTU (Master/Slave), Modbus TCP Server, ASCII
GENERAL	
Power supply	24 VDC (-15... +25%) / 50/60 Hz
Power consumption	13 VA (+3.5 VA with both expansion units) + 10 VA (for P04)
Dimensions / Weight	MP02: 152 x 110 mm, depth 66 mm / 460 g approx. P04: 83 x 159 mm, depth 28 mm / 200 g approx.
Mounting	MP02: OMEGA DIN rail - P04: flush in panel 68 x 127 (panel only) or 68 x 138 (with adapter)
Front protection degree	MP02: IP20 - P04: IP65
Operating / storage temperature	0... 50°C (32... 122°F) / -40...+70°C (-40... 158°F)
Operating humidity	5... 95 RH% without condensation

Notes: The basic module can be extended by 1 or 2 expansion modules connected directly to the CPU.
To obtain more expansions it's possible to connect I/O modules both analog and digital to an RS485 port.

Digital Signal expansion units:
MPD10808 (8 inputs 24 VDC + 8 outputs 24 VDC, 0.5A)
MPD11616 (16 inputs 24 VDC + 16 outputs 24 VDC, 0.5A)
MPD20808 (8 inputs 24 VDC + 8 outputs 2A relay)
MPD40808 (8 inputs 120 VAC+ 8 outputs 2A relay)

CE

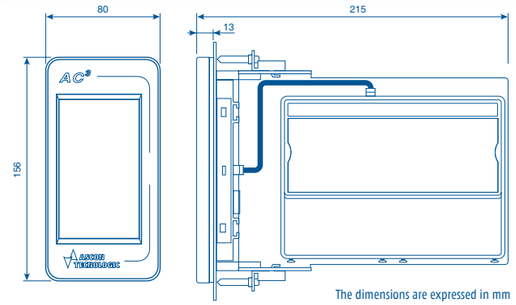
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

HARDWARE MODULE	CODE
With hardware module nP4	AC3NP
ANALOG INPUTS	
6 ch - 0/4... 20mA, Volt	0
8 ch - 0/4... 20mA, Volt	1
6 ch - 0/4... 20mA, Volt + 2 Universal channels	2
ANALOG OUTPUTS	
Not available	-
2 outputs 0/4... 20mA, Volt	1
4 outputs 0/4... 20mA, Volt	2
EXPANSION UNIT 1	
Not available	-
8 DI (24 VDC) + 8 DO (24 VDC)	1
8 DI (24 VDC) + 8 relay outputs	2
16 DI (24 VDC) + 16 DO (24 VDC)	3
8 inputs (120 VAC) + 8 relay outputs	4
EXPANSION UNIT 2	
Not available	-
8 DI (24 VDC) + 8 DO (24 VDC)	1
8 DI (24 VDC) + 8 relay outputs	2
16 DI (24 VDC) + 16 DO (24 VDC)	3
8 inputs (120 VAC) + 8 relay outputs	4
OPERATOR PANEL MODULE	
Not available	--
Operator panel **P04** with adapter	P4
Adapter	PA
USB PORT	
Not available	-
USB port	U
CABLES AND ACCESSORIES	
Not available	--
Short plate + cable 0.15 m	P1
Long plate + cable 0.15 m	P2
Cable 0.15 m	C0
Cable 1 m	C1
Cable 2 m	C2
Cable 5 m	C5
HW/SW CUSTOMIZATION	
Not available	----
Ascon Tecnologic customization	ATA3
SW VERSION	
Not available	-
Release 0	0

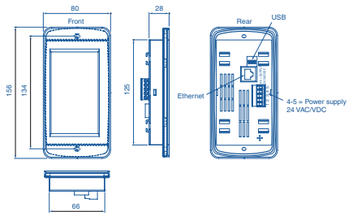
DIMENSIONS

AC3NP



The dimensions are expressed in mm

AC3NP



The dimensions are expressed in mm

MP-D 1/2/4

• EXPANSION UNITS
FOR MICROPAC MP02




FEATURES

INPUTS	MP-D1/08-08/M0	MP-D2/08-08/M0	MP-D4/08-08/M0	MP-D1/16-16/M0
Digital	8 inputs (24 Vdc)		8 inputs (120 Vac)	16 inputs (24 Vdc)
OUTPUTS				
Digital	8 outputs (24 Vdc, 0.5A)	8 relay outputs 2A, NO		16 outputs (24 Vdc, 0.5A)
GENERAL				
Power supply	24 Vdc (-15... +25%) (50/60 Hz)			
Power consumption	4 VA			
Dimensions / Weight	76 x 110 mm, depth 66 mm / 220 g			152 x 110 mm, depth 66 mm / 350 g
Mounting	On OMEGA DIN A rail			
Front protection degree	IP 20			
Connections	Terminal block with CLAMP connectors			
Operating / storage temperature	0... +50°C (32... +122°F) / -20...+85°C (-4... +185°F)			
Operating humidity	5... 95 RH% without condensation			

CE

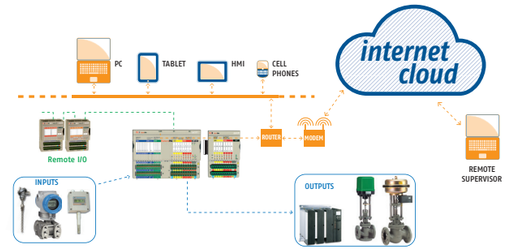
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

EXPANSION UNITS - SIGMA2 MICROPAC	
MP-D1/08-08/M0	8 digital inputs 24Vdc optoisolated + 8 digital outputs 24V 0.5V optoisolated
MP-D1/16-16/M0	16 digital inputs 24Vdc optoisolated + 16 digital outputs 24V 0.5V optoisolated
MP-D2/08-08/M0	8 digital inputs 24Vdc + 8 digital outputs 230Vac/2A relay SPST-NO
MP-D4/08-08/M0	8 digital inputs 120Vac + 8 digital outputs 230Vac/2A relay SPST-NO

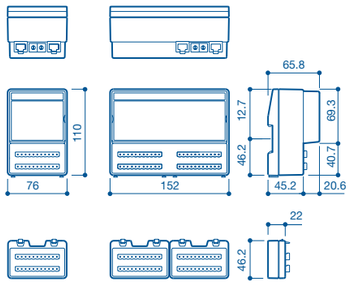
CONNECTIONS

MP-D1 / MP-D2 / MP-D4



DIMENSIONS

MP-D1 / MP-D2 / MP-D4



The dimensions are expressed in mm

OPENPCS

- PROGRAMMING SOFTWARE COMPLIANT TO STANDARD IEC 61131-3
- 6 PROGRAMMING LANGUAGES
- WIDE RANGE OF LIBRARIES TO SIMPLIFY THE PROGRAMMING

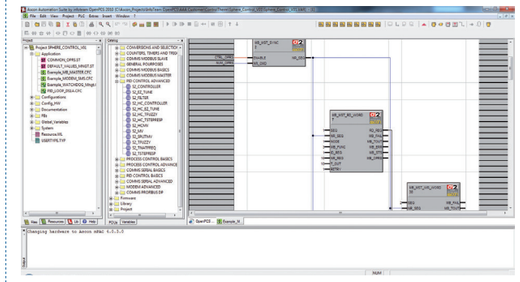
FEATURES

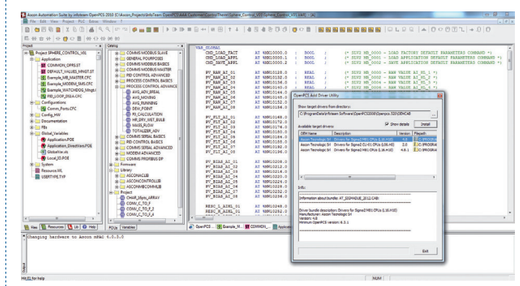
FUNCTIONAL	SOFTWARE OPENPCS
Standard	IEC 61131-3
Programming languages	Instruction List Structured Text Function Block Diagram Ladder Diagram Sequential Function Chart Continous Function Chart
Programming	Application project developing structured and simplified by the variable declaration method and keywords auto-recognition. Integrated online debug and simulation tools. Projects management "easy to use" trough the dedicated browser.
Libraries	AT_Generic_Advanced_Lib: includes advanced calculation and process functions such as Averages, Characterizations/Linearizations, A/D conversions, A/D Selectors, Totalizators, Limiters
	AT_Process_Generic_Lib: includes advanced calculation and process functions such as Alarms, Singnal's conditioning, Dew point, Relative Humidity, Bacteria load reduction (Fo), Compensated flow, Carbon potential calculation
	AT_IO_Modules_Basic_Lib: specifically designed to configure and manage the I/O modules
	AT_Process_Control_Lib: includes all the advanced PID functions dedicated to the process control such as single or double action controllers, within different Autotuning and Feed Forward modes
	AT_CU02_Cpu_Lib: specifically designed to manage the whole communication and diagnostic operations of the onboard I/Os and remote modules
	AT_Communications_Lib: includes a complete set of function blocks dedicated to the Modbus Master, Slave and Profibus agents communication activities plus Modems management.

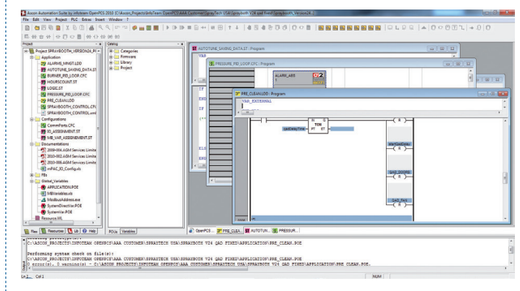
HOW TO ORDER

SOFTWARE OPENPCS	
APS2 SWOPCS00	IEC 61131-3 programming software

SCREENSHOTS







PRE-PROGRAMMED SYSTEMS

Solutions ready to be used!

Flexible systems able to suit to all plants, through a simple configuration and programming by means of touch screens.

CLIMA PAC

- "TURN KEY" SOLUTION FOR BOILER ROOMS
- COMPLETE CONTROL SOLUTION WITH HIGH CONNECTIVITY

FEATURES

	CLIMAPAC
Functions	The control system climaPAC is able to perform :
	boiler control in power or temperature
	the cascade of condensing modules
	adjustment of 3 independent heating outlets each with temperature curve and weekly programmable thermostat with 8 slots for attenuation
	adjustment of domestic hot water in the boiler
	the management of the recirculation circuit with programmable time bands
	the function against legionella
	management of solar panels
	reading counts calories in the central
	the remote management climaPAC allows to monitor online the system, to examine continuous recording of process data, to work on the operative parameters (programmable thermostats, curves weather, etc .)
	access to facilities and functionality is regulated by password
	for each plant the interventions carried out by the various operators can be recorded and it is possible to upload electronic documents so that it is always available via the Internet
PRE-PROGRAMMED SOLUTION	
System elements	Electric panel code CPS 02
	Kit external operator panel
	Supervision via Web ClimaVEM
	PT1000 probe with thermowell and PT1000 probe for external mounting

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

CPS02	CODE
OPERATOR PANEL	
Without Operator panel	-
With Operator panel integrated in the system	P
MODEM	
Without Modem	-
With UMTS Modem for remote management	P
INPUTS EXPANSION MODULES	
Without modules	-
With 4 PT1000 inputs modules (for transfer of solar thermal)	4
With 6 PT1000 inputs modules	6
With 8 PT1000 inputs modules	8
OUTPUTS EXPANSION MODULES	
Without modules	-
With 8 0... 10V control outputs modules	8

COMPONENTS

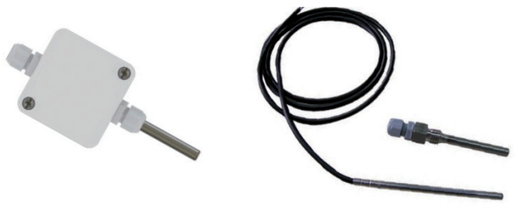
ACCESSORIES
OPKIT - Kit made of 7" Touch screen operator panel with connection cables
R2IA46P015NPSC0 - PT1000 6X40 mm probe in ABS case
R2IB126P15NPS - PT1000 6X120 mm probe with 1.5 m PVC cable
9TUDRC102 - Thermowell for immersion probes 1/4 gas thread, pipe 7.5X60 mm under-thread 60 mm with PG7 connector

OPERATOR PANELS

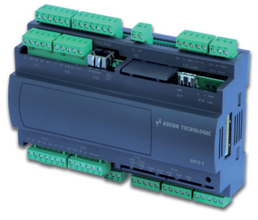
OPERATOR PANELS

ELECTRIC PANEL

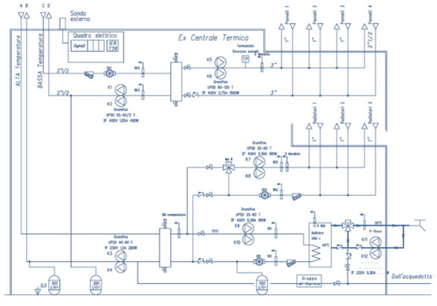
PROBES AND THERMOWELL



M81



HYDRAULIC DIAGRAM



BREWERY PAC

• PRE-PROGRAMMED SYSTEM TO MANAGE BREWERY PLANTS

FEATURES

	BREWERYPAC
Functions	Solution that allows to control the temperature in the fermenter for beer production. Enabling is done through the touch screen and allows both control and supervision of individual fermenters. The modularity of the system is 8.
	Temperature control of the fermentors
	Temperature real time trend with time base of 1, 3, 6, 12 hours
	Daily historical trend
	Alarm management
	Alarm history recording
	Remote Management via Ethernet (also via the Web, via tablet or PC)
PRE-PROGRAMMED SOLUTION	
System components	Operator panel OPMT3105/N
	Modular solution: 1 to 32 controllers mod. K31 or 1 to 4 M81 controllers (each controlling 8 zones)

HOW TO ORDER

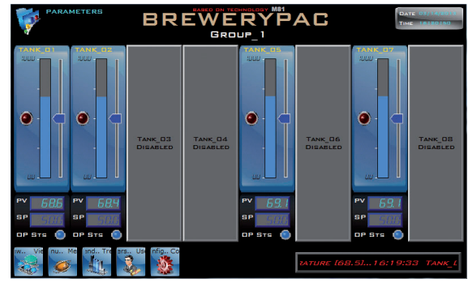
To compose the part number, pls. choose one of the option for each variable

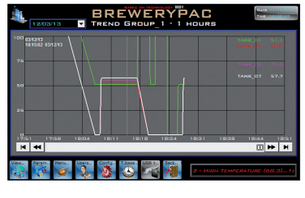
BP01 XXX-YY
OPMT3105/N pre-programmed with BreweryPAC interface on board
no. 1... 8 Controllers mod. M81 pre-programmed with BreweryPAC applicative
no. 1... 32 Controllers mod. K31

COMPONENTS

M81

SCREENSHOTS





PLC AND OPERATOR PANELS

Solutions for every demand of space!

PLC and operator panels with bright TFT display widescreen high resolutionre back lighted LED and up to 256 MB of memory.

For every application where power and control have to be separate from the HMI, we offer operator panels, both for front panel mounting and with custom dimensions.

PLC AND OPERATOR PANELS

FEATURES		P04	OPMT 8050IE	OPMT 8071IE		OPMT 8073IE	OPMT 8090XE	OPMT 8092XE	OPMT 8121XE	OPMT 8150XE/N
Dimensions (inches)	4.3"	•	•							
	7"			•		•				
	9.7"						•	•		
	12.1"								•	
	15"									•
Flash MB memory			128	128		128	512	512	256	256
RAM MB memory			128	128		128	256	256	256	256
Colours			16.7M	16.7M		16.7M	262k	262k	16.2M	16.2M
Slot SD/SDHC card		•							•	•
USB Host		•	•	•		•	•	•	•	•
USB Client									•	•
Ethernet		•	•	•		2	•	x2	•	•
RTC		•	•	•		•				
Power supply	24 Vac/Vdc	•	•	•		•	•	•	•	•
COM1 RS232/485 2/4 wires			•						•	•
COM1 RS232				•		•	•	•		
COM2 RS485 2/4 wires				•		•	•	•		
COM3 RS2485 2 wires		•	•	•		•	•		•	•
COM3 RS485 2w/ RS232								•		
CAN bus								•		•
Programming Software (optional)		•	•	•		•	•	•	•	•
CE certification + UL approval			•	•		•	•		•	•

FEATURES		P01		P30	P32
Dimensions (mm)	78 x 35			•	•
	on request	•			
Single display		•			
Double display				•	•
Power supply (from the controller)	12 Vdc	•			
	9 Vdc			•	•
TTL Modubus not isolated		•		•	•
CE certification + UL approval		•		•	•

P04

- PLC WITH TOUCH SCREEN MONITOR
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 4.3"

FEATURES

DISPLAY	P04
Display	4.3" TFT
Resolution (pixel)	480 x 272
Brightness (cd/m²)	280
Back Light type	LED
Colours	262 K
Touch panel	4 wire Resistive Type
MEMORY	
Flash (MB)	128
RAM (MB)	128
FUNCTIONAL	
CPU	ARM9 26 32 Bits 4545 MHz processor
PLC	programmable with standard languages IEC61131-3, simulator and application monitor for debugger
Slot SD card	4 GB Micro SD
USB Host	2.0 x 1
Ethernet	10/100 base-T
COM port	COM1 RS485 2w
Fieldbuses	Modbus RTU, ASCII, TPC, CANOpen
RTC	Available
POWER SUPPLY	
Power supply	24 Vdc/Vac ±20%
Power consumption (mA @24V)	250
MECHANICAL	
Case	UL V04 Autoextinguishing plastic
Dimensions	83 x 159 x 28 mm
Weight	200 g
Protection degree	IP65
Operating temperature / Storage	0... +50°C (32°... +122°F) /-20... +60°C (-4... +140°F)
Operating humidity	10...90% RH without condensation
SOFTWARE	
Graphic interface	QT programming tool

CE

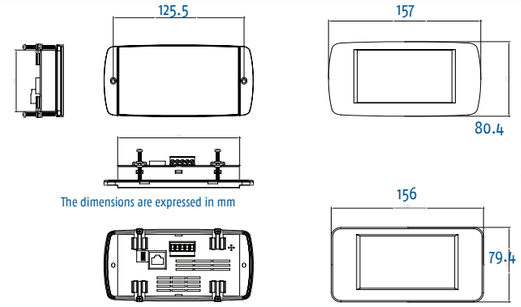
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

P04	CODE
MODEL	
Touch screen 4.3" operator panel	-
Touch screen 4.3" operator panel with PLC function on board	P
APPLICATIVE ON BOARD	
Code that defines the applicative	XX
ETHERNET PORT	
Not available	-
Ethernet	E
USB PORT	
Not available	-
USB	U
COM PORT	
Not available	-
RS485	S
AT LIN	L
CAN	C
SD CARD	
Not available	-
SD card memory	M
CLOCK	
Not available	-
Real Time Clock	C
CONNECTIONS	
Plug-in screw type with connectors included	E
No connectors	N
CASE - COLOUR AND SHAPE	
Black, rectangular	B
Black, rounded	R
White, rectangular	S
White, rounded	W

DIMENSIONS

P04



The dimensions are expressed in mm

OPMT

- TOUCH SCREEN OPERATOR PANELS
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 4.3" E 7"

FEATURES

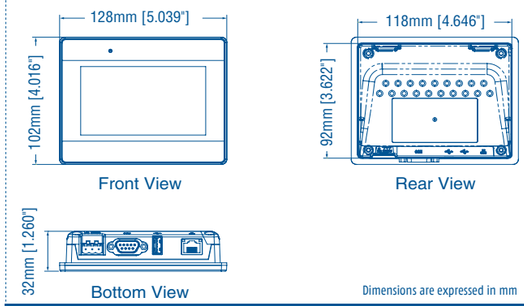
DISPLAY	OPMT		
	8050 IE	8071 IE	8073 IE
Display	4.3" TFT	7" TFT	
Resolution (pixel)	480 x 272	800 x 480	
Brightness (cd/m²)	400		
Contrast ratio	500:1		800:1
Back Light type	LED		
Colours	16.7 M		
Touch panel	4 wire Resistive Type		
MEMORY			
Flash (MB)	128 MB		
RAM (MB)	128 MB		
I/O PORTS			
USB Host	2.0 x 1		
Ethernet	10/100 base-T x 1		10/100/1000 base-T x 2
COM port	COM1 (RS232/485 2 e 4W) COM3 (RS485 2W)	COM1 (RS232) COM2 (RS485 2 e 4W) COM3 (RS485 2W)	COM1 (RS232) COM2 (RS485 2 e 4W) COM3 (RS232/RS485 2W)
RTC (on board)	Available		
POWER SUPPLY			
Power supply	24 VDC ±20%		
Power supply isolation	Built-in		
Power consumption (mA@24V)	300	450	600
MECHANICAL			
Case	Plastic		
Dimensions WxHxD	128 x 102 x 32 mm	200.3 x 143.3 x 34 mm	
Panel cut-out	119 x 93 mm	192 x 138 mm	
Weight	250 g	600 g	
Protection degree	NEMA4/IP65		
Mounting	On panel		
Storage temperature	-20°... 60°C (-4°...140°F)		
Operating temperature	0°... 50°C (32°...122°F)		
Operating humidity	10...90% RH without condensation		
SOFTWARE			
Software (optional)	Programmable with EasyBuilderPro		
COMPLIANCE			
Compliance	CE, UL type 4X (indoor use)	CE, ATEX Zone 2/22 Cat. 3 G/D	CE, ATEX Zone 2/22 Cat. 3 G/D, UL listed

HOW TO ORDER

OPMT	
8050 iE	4.3" TFT, 16.7M colours, 480x272 p., 2 COM
8071 iE	7"TFT, 16.7M colours, 800x480 p., 3 COM
8073 iE	7"TFT, 16.7M colours, 800x480 p., 3 COM

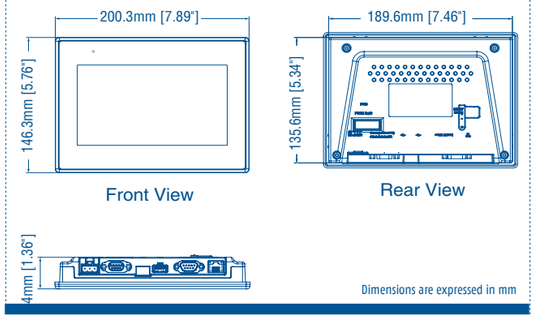
DIMENSIONS

OPMT 8050 IE



Dimensions are expressed in mm

OPMT 8071 IE/ OPMT 8073 IE



Dimensions are expressed in mm

OPMT

- TOUCH SCREEN OPERATOR PANELS
- TFT WIDESCREEN HIGH RESOLUTION BACKLIGHTED LED DISPLAY
- 9.7", 12.1" E 15"




FEATURES

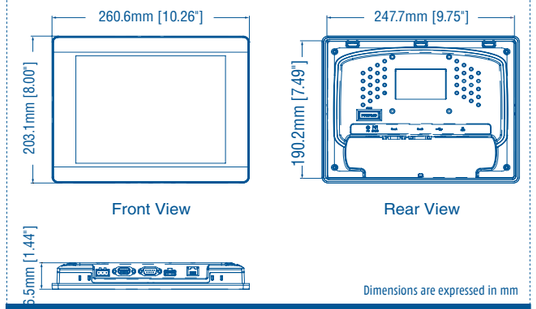
DISPLAY	OPMT			
	8092 XE	8090 XE	8121 XE	8150 XE/N
Display	9.7" TFT		12.1" TFT	15" IPS
Resolution (pixel)	1024 x 768			
Brightness (cd/m²)	350		500	400
Contrast ratio	500:1		700:1	1000:1
Back Light type	LED			
Colours	262K		16.2 M	
Touch panel	4 wire Resistive Type			
MEMORY				
Flash (MB)	512		256	
RAM (MB)	256			
I/O PORTS				
Slot SD card	Not available		SD/SDHC	
USB Host	2.0 x 1			
USB Client	Not available		2.0 x 1	
Ethernet	10/100/1000 Base-T x 2	10/100 Base-T x 1	10/100 Base-T x 1	
CAN bus	Available	Not available		
COM port	COM1 RS232 COM2 RS485 2w/4w COM3 RS232 or RS485 2w	COM1 RS232 COM2 RS485 2w/4w COM3 RS485 2w/RS232	COM1 RS232/RS485 2w/4w COM3 RS485 2w	
RS485 dual isolation	Not available		Available	
RTC	Available			
POWER SUPPLY				
Power supply	24 VDC ±20%			
Power consumption (mA @24V)	650	500	800	1.2A
MECHANICAL				
Case	Plastic		Aluminium	
Dimensions WxHxD	260.6 x 203.1 x 36.5 mm		317 x 244 x 46 mm	366 x 293 x 57 mm
Panel cut-out	250 x 192 mm		305 x 231 mm	352 x 279 mm
Weight	850 g		2.100 g	2.750 g
Protection degree	NEMA4/IP65		IP66/NEMA4	NEMA4/IP65
Mounting	On panel			
Storage temperature	-20°... 60°C (-4°...140°F)			
Operating temperature	0°... 50°C (32°...122°F)			
Operating humidity	10...90% RH without condensation			
SOFTWARE				
Software (optional)	Programmable with EasyBuilderPro			
COMPLIANCE				
Compliance	CE, ATEX Zone 2/22 Cat. 3 G/D, UL listed UL type 4X (indoor use)	CE, ATEX Zone 2/22 Cat. 3 G/D	CE, UL listed UL type 4X (indoor use)	CE, ATEX Zone 2/22 Cat. 3 G/D, UL listed UL type 4X (indoor use)

HOW TO ORDER

OPMT	
8092 XE	9.7" TFT, 262k colours, 1024 x 768 p., 3 COM
8090 XE	9.7" TFT, 262k colours, 1024 x 768 p., 3 COM
8121 XE	12.1"TFT, 16.2M colours, 1024 x 768 p., 2 COM
8150 XE/N	15"IPS, 16.2M colours, 1024 x 768 p., 2 COM

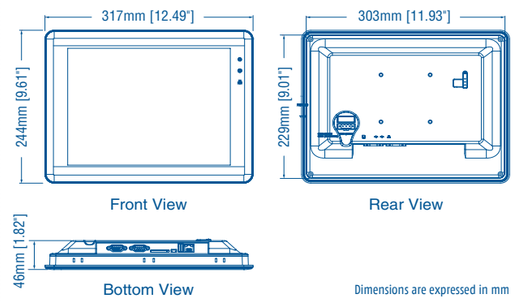
DIMENSIONS

OPMT 8090 XE/ OPMT 8092 XE



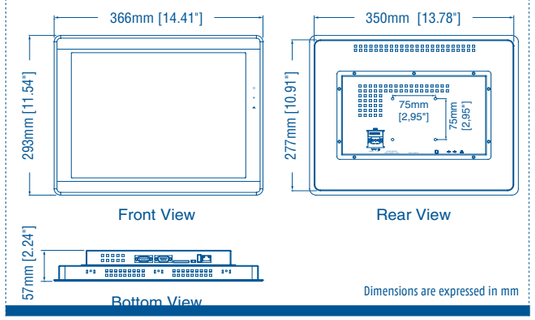
Dimensions are expressed in mm

OPMT 8121 XE



Dimensions are expressed in mm

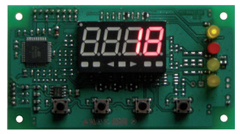
OPMT 8150 XE/N



Dimensions are expressed in mm

P 01/30/32

- REMOTE OPERATOR PANELS
- EXTERNAL POWER SUPPLY (BY A SEPARATED CONTROL UNIT)
- 78 X 35 MM OR ON REQUEST



FEATURES

DISPLAY	P01	P30	P32
Display	Single: 4 red digit, h 15.5 mm + Bargraph 3 LED	Single: 4 red digit, h 12 mm + Bargraph 3 LED	Dual: Main: 4 red digit, h 7 mm Secondary: 4 red digit, h 7 mm
FUNCTIONAL			
Sampling rate	500 ms		
Acoustic alarm	--	Internal buzzer (optional)	
Serial communication	TTL Modubus not isolated		
Protocol	ModBus-RTU (JBUS)		
Baud rate	38400 baud		
GENERAL			
Power supply	12 Vdc supplied by the controller	9 Vdc supplied by the controller	
Power consumption	50 mA		
Dimensions / Weight	On request / 115 g approx.	78 x 35 mm - depth 64 mm / 120 g approx.	
Mounting	Behind layout	Flush in panel in 71 x 29 mm hole	
Front protection degree	--	IP65, mounted on panel with gasket	
Connections	Screw terminals	Screw terminal block 2.5 mm²	
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)		
Operating humidity	20... 95 RH% without condensation		
Conformity	Directive EMC 2004/108/CE (EN 61326) - Directive LV 2006/95/CE (EN 61010-1)		

HOW TO ORDER

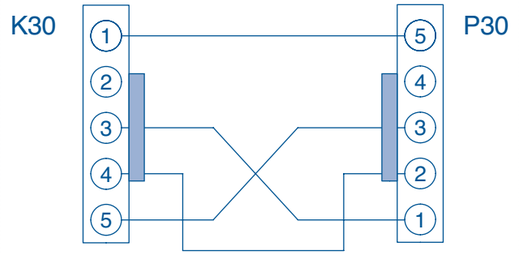
To compose the part number, pls. choose one of the option for each variable

P01	CODE
DISPLAY	
Red	-
Amber	A
Blue	U
INPUT	
From the connected controller	-
OUTPUT	
Out 8 Vdc	W
Not available	-

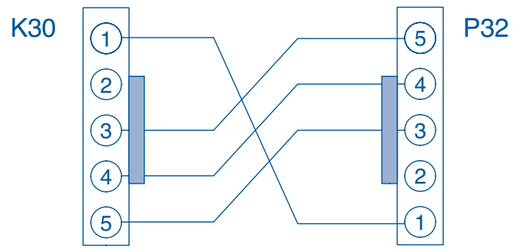
P30 / P32	CODE
DISPLAY	
Red	-
Blue	U
BUZZER (INTERNAL)	
Available	B
Not available	-

CONNECTIONS

P30

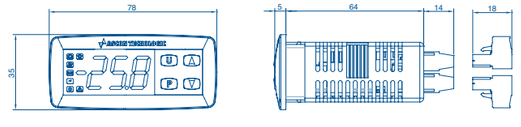


P32



DIMENSIONS

P30 / P32



The dimensions are expressed in mm

TIMERS – COUNTERS – POWER LIMITERS

Multi-scale and multi-function

Microprocessor based timers, counters and power limiters with 4 digits single display, equipped with double outputs and screw terminal block. Some models are also available with buffer battery for time counting also in lack of supply.

TIMERS - COUNTERS - POWER LIMITERS

FEATURES		TIMERS					COUNTERS			POWER LIMITERS	
		BWT40	TT34	TT49		TT73	TC34	TC49	TC73	TP34	TP49
Dimensions (mm)	78 x 35		•				•			•	
	48 x 48			•				•			•
	72 x 72					•			•		
	35.8 x 90 4 DIN Modules	•									
4 digit single display			•	•		•	•	•	•	•	•
6 digit single display		•									
Input	2 for free voltage contacts		•	•		•	•	•	•	•	•
	2 for voltage contacts		•	•		•	•	•	•	•	•
Relay or voltage for SSR drive outputs			2	2		2	2	2	2	2	2
Relay outputs		2									
Power supply	12 Vac/Vdc		•	•		•	•	•	•	•	•
	24 Vac/Vdc		•	•		•	•	•	•	•	•
	100... 240 Vac	•	•	•		•	•	•	•	•	•
Multi-scale, Multi-function		•	•	•		•				•	•
Multi-frequency, Multi-function							•	•	•		
40 daily and/or weekly programs		•									
Manual output driving, Daylight saving time function, Random function		•									
CE certification			•	•		•	•	•	•	•	•

BWT40

- MULTIFUNCTION TIMER PROGRAMMER
- UP TO 2 OUTPUTS
- UP TO 40 DAILY AND WEEKLY PROGRAMS

FEATURES

DISPLAY	BWT40
Single LCD	Multi-indication, 6 digit
OUTPUTS	
Up to 2	OUT 1: Relay SPDT 16 A at 250 VCA or OUT 1 and OUT 2: Relay SPDT 8 A at 250 VCA
FUNCTIONAL	
Programmable functions	Pulses programming: adjustable from 0 to 59 sec Manual outputs driving Daylight Saving Time Random Function 40 daily/weekly programs LED for status indication of the relay outputs LED indication of the instrument powered
GENERAL	
Power supply	100... 240 Vac ±10% (48...63 Hz)
Power consumption	4.4 VA approx.
Battery	Internal 4 years approx.
Accuracy	(at 20 ° C): ± 2.0
Dimensions / Weight	35.8 x 90 mm, depth 73 mm / 110 g approx.
Mounting	On OMEGA DIN A rail
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)
Operating humidity	30...95% RH without condensation

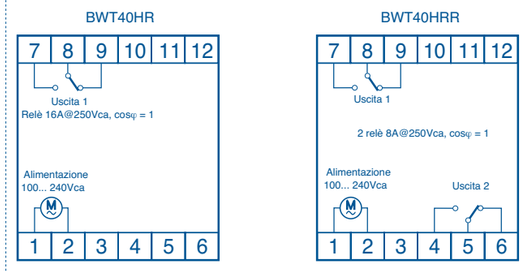
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

BWT40	CODE
POWER SUPPLY	
100... 240 Vac/Vdc	H
OUT 1	
Relay	R
OUT 2	
Relay	R
Not available	-

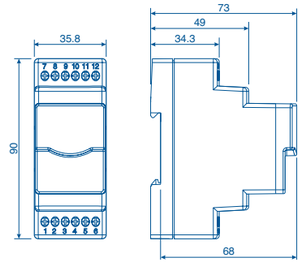
CONNECTIONS

BWT40



DIMENSIONS

BWT40



The dimensions are expressed in mm

T31

- MULTISCALE AND MULTIFUNCTION TIMER
- UP TO 2 OUTPUTS
- NFC PROGRAMMING

FEATURES

DISPLAY	T31
Single display	4 red or blue digit, h 12 mm
INPUT	
Digital input	2 for free voltage contacts
Delay time inputs	15 msec max.
OUTPUTS	
Up to 2	OUT1: Relay SPDT 16A EN61810: 16 (9) A, 1HP 250V, 1/2HP 125VAC UL 60730: 12A Res., 30 LRA, 5 FLA or 12 Vdc/15 mA for SSR driving (12A max for plug-in terminal version) OUT2: Relay SPST-NO 5A EN61810: 5 (1) A, 1HP 250V, 1/2HP 125VAC UL 60730: 2A Gen.use or 12 Vdc/15 mA for SSR driving (12A max for plug-in terminal version)
Relay electrical life	100.000 operations
FUNCTIONAL	
Functioning mode	Up to 3 set point 5 functioning mode for OUT1 5 functioning mode for OUT2 6 counting enabling modes 2 counting modes (UP or DOWN)
Time scale	9999 hrs - 99 hrs 59 min - 99 min 59 sec - 99 sec 99 hundredths of a second
Display resolution	According to the scale used: Hours - Minutes - Seconds - Hundredths of a second
Overall accuracy	± 0.1% f.s.
GENERAL	
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc ±10% (50/60 Hz)
Power consumption	3 VA approx.
Dimensions / Weight	78 x 35 mm - depth 64 mm / 125 g approx.
Connections	Power supply and outputs: screw terminal block 2x1 mm² or plug-in or Faston Inputs: 2x1 mm² screw terminal block or plug-in
Mounting	Flush in panel in 29 x 71 mm hole
Front protection degree	IP 65, mounted on panel with gasket and screw brackets
Operating / storage temperature	0... 50°C (32... 122°F) / -25... 60°C (-13... 140°F)
Operating humidity	Lower than 95 RH% without condensation / 30... 95 RH% without condensation
Conformity	Directive CEE BT 2006/95/CE (EN61812-1); Directive EMC 2014/108/UN (EN55022: class B; EN61000-4-2: 8 kV air, 4 kV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2 kV supply and relay outputs, 1KV inputs; EN61000-4-5: supply 2 kV com. mode, 1 kV\ diff. mode; EN61000-4-6: 3V).

CE

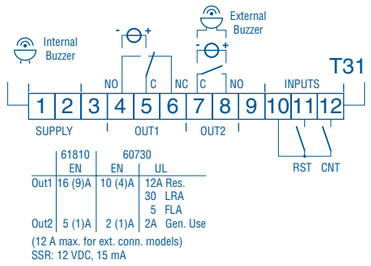
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

T31	CODE
NFC PROGRAMMING	
Available	N
Not available	-
POWER SUPPLY	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
OUT 1	
Relay SPDT 16A-AC1	S
12 Vdc for SSR driving	0
OUT 2	
Relay SPST-NO 5A	R
12 Vdc for SSR driving or external Buzzer	0
Non presente	-
INTERNAL BUZZER	
Available	B
Not available	-
POWER SUPPLY AND OUTPUT TERMINALS	
Screw terminal block (standard)	V
Plug-in screw type p. 5.00	E
Plug-in screw type, fix part only p. 5.00	N
Faston 6.3	F
INPUT TERMINALS	
Screw terminal block (standard)	V
Plug-in screw type 5.00	E
Plug-in screw type, fix part only p. 5.00	N
DISPLAY	
Red	R
Blue	U

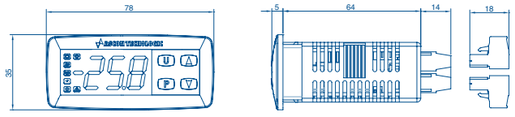
CONNECTIONS

T31



DIMENSIONS

T31



The dimensions are expressed in mm

TT 49/73

- MULTISCALE AND MULTIFUNCTION TIMERS
- UP TO 2 OUTPUTS
- WITH BACK UP BATTERY

FEATURES

DISPLAY	TT49	TT73
Single	4 red digit, h 12 mm	4 red digit, h 14 mm
INPUTS		
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)	
Delay time inputs	15 msec max.	
OUTPUTS		
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR	
FUNCTIONAL		
Programmable functions	OUT 1: Delayed, Feedthough, oscillator (start/stop) with asymmetric times start ON, or start OFF, One cicle asymmetric oscillator (start/stop) with start OFF, OUT 2: as OUT 1, as instant contact, as OUT 1 but with another independent time, as OUT 1 but with another relative time	
Programmable time scales	9999 hrs - 99 hrs 59 min - 99 min 59 sec - 99 sec 99 cent. sec	
Counting mode	UP or DOWN	
Display resolution	According to the used scale : hrs - min - sec - Cent sec	
Counting autonomy without power supply	Approx. 10 hrs with full load battery	
GENERAL		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc ±10% (50/60 Hz)	
Power consumption	2 VA approx.	
Power consumption with battery supply	4.5 mA approx.	
Battery (*)	Internal 3.6 V - rechargeable	
Power consumption voltage inputs	1 mA max.	
Dimensions / Weight	48 x 48 mm (1/16DIN) - depth 98 mm / 200 g approx.	72 x 72 mm - depth 96 mm / 270 g approx.
Connections	Screw terminal block 2x1 mm²	
Mounting	Flush in panel in 45 x 45 mm hole	Flush in panel in 66.5 x 66.5 mm hole
Front protection degree	IP 54, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)	
Operating humidity	30... 95 RH% without condensation	
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)	

(*) Note: The battery is used to keep counting even in the absence of supply.

CE

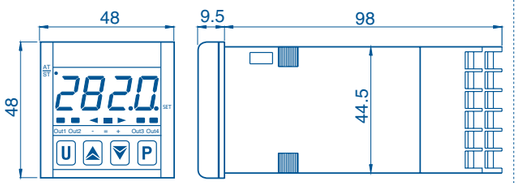
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TT49 / TT73	CODE
POWER SUPPLY	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
INPUT	
Voltage	V
Free voltage	C
OUT 1 + OUT 2	
Relay	RR
Vdc for SSR driving	00
BATTERY	
Internal	B
No battery	-

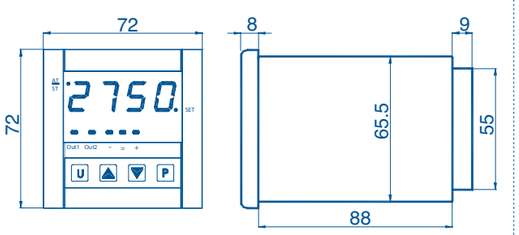
DIMENSIONS

TT49



The dimensions are expressed in mm

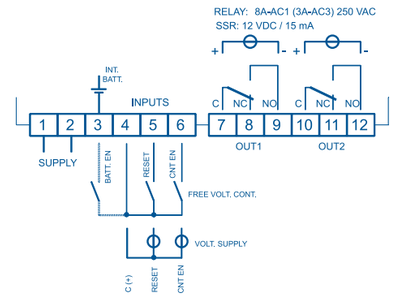
TT73



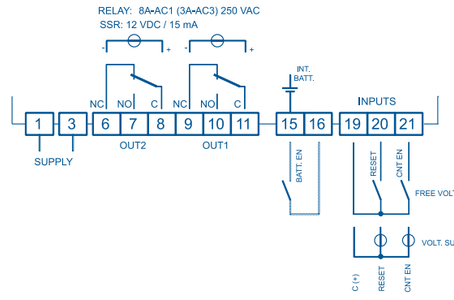
The dimensions are expressed in mm

CONNECTIONS

TT49



TT73



TC 34/49/73

- MULTIFUNCTION AND MULTIFREQUENCY COUNTERS
- UP TO 2 OUTPUTS

FEATURES

DISPLAY	TC34	TC49	TC73
Single	4 red digit, h 12 mm		4 red digit, h 14 mm
INPUTS			
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)		
Delay time inputs	15 msec max.		
OUTPUTS			
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR		
FUNCTIONAL			
Programmable functions	Restart - Restart/Lap - Count		
Frequenza di conteggio	2 - 10 - 40 - 125 - 1000 Hz. Programmable		
Counting mode	UP or DOWN		
Display resolution	9999		
Back up memory	Programmable Back-up function in case of power supply failure		
GENERAL			
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc ±10% (50/60 Hz)		
Power consumption	3 VA approx.		
Power consumption voltage inputs	1 mA max.		
Dimensions / Weight	33 x 75 mm - depth 64 mm / 175 g approx.	48 x 48 mm (1/16DIN) - depth 98 mm / 200 g approx.	72 x 72 mm - depth 96 mm / 270 g approx.
Connections	Screw terminal block 2x1 mm²		
Mounting	Flush in panel in 29 x 71 mm hole	Flush in panel in 45 x 45 mm hole	Flush in panel in 66.5 x 66.5 mm hole
Front protection degree	IP 65, mounted on panel with gasket	IP 54, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-20... 70°C (-4... 158°F)		
Operating humidity	30... 95 RH% without condensation		
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)		

CE

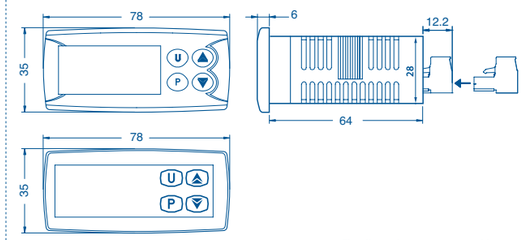
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TC34 / TC49 / TC73	CODE
POWER SUPPLY	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
INPUT	
Voltage	V
Free voltage	C
OUT 1 + OUT 2	
Relay	RR
Vdc for SSR driving	00

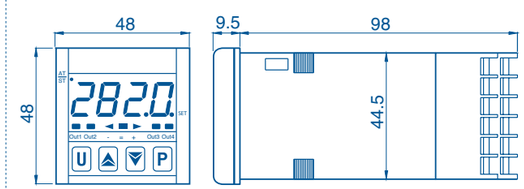
DIMENSIONS

TC34



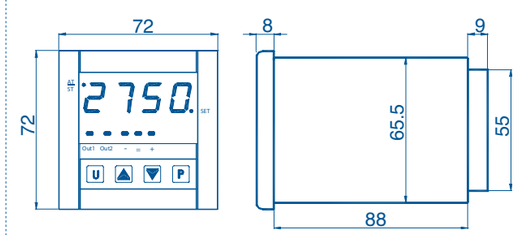
The dimensions are expressed in mm

TC49



The dimensions are expressed in mm

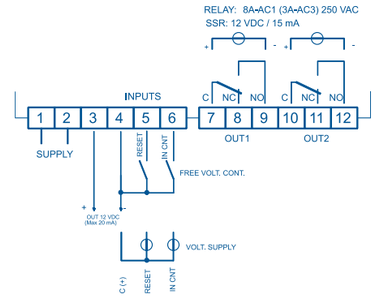
TC73



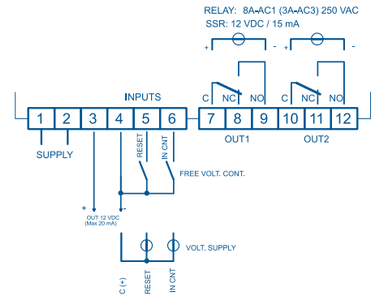
The dimensions are expressed in mm

CONNECTIONS

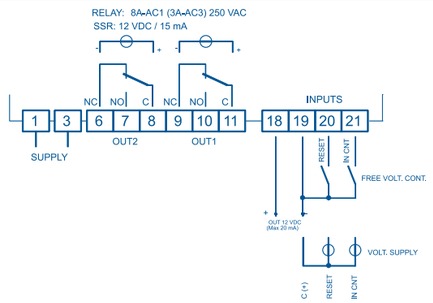
TC34



TC49



TC73



TP 34/49

- POWER LIMITERS
- UP TO 2 OUTPUTS

FEATURES

DISPLAY	TP34	TP49
Single	4 red digit, h 12 mm	
INPUTS		
Digital inputs	2 for free voltage contacts or 2 for voltage contacts (the same of the power supply)	
Delay time inputs	15 msec max.	
OUTPUTS		
Up to 2	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12 Vdc/15 mA to drive SSR	
GENERAL		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 90... 240 Vac/Vdc ±10% / 50/60 Hz	
Power consumption	2 VA approx.	
Power consumption voltage inputs	1 mA max.	
FUNCTIONAL		
Application	Asymmetric oscillator timer (start/stop) with power limiter function	
Programmable functions	OUT 1: oscillator (start/stop) with asymmetric times start ON, or start OFF OUT 2: as OUT 1, as OUT 1 but in opposite way, as OUT 1 but in opposite way with power limiter function	
Outputs cycle time	From 1 to 900 sec	
Dimensions / Weight	33 x 75 mm - depth 64 mm / 175 g approx.	48 x 48 mm (1/16DIN) - depth 98 mm/ 200 g approx.
Connections	Screw terminal block 2x1 mm²	
Mounting	Flush in panel in 29 x 71 mm hole	Flush in panel in 45 x 45 mm hole
Front protection degree	IP 65, mounted on panel with gasket	IP 54, mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-20... 70°C (-4... 158°F)	
Operating humidity	30... 95 RH% without condensation	
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)	

CE

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TP34 / TP49	CODE
POWER SUPPLY	
12 Vac/Vdc	F
100... 240 Vac/Vdc	H
24 Vac/Vdc	L
INPUT	
Voltage	V
Free voltage	C
OUT 1	
Relay	R
Vdc/SSR	0
OUT 2	
Relay	R
Vdc for SSR driving	0

DIMENSIONS

TP34

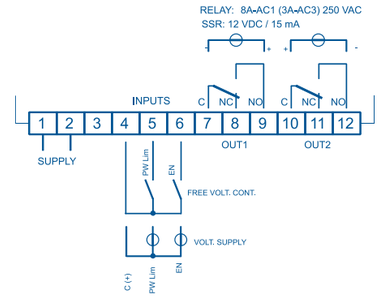
The dimensions are expressed in mm

TP49

The dimensions are expressed in mm

CONNECTIONS

TP34



TP49

INDICATORS

Much more than simple indicators!

Digital indicators with one or more universal inputs and potentiometer or with configurable input. Also available with a dedicated input version strain gauge for melt pressure transducer and load cell.

INDICATORS

FEATURES		TLI40	K31V	K38V	K48V	K85V	C1	J1	J3	J5
Dimensions (mm)	78 x 35		•	•						
	48 x 24						•			
	48 x 48	•			•					
	70 x 84 4 DIN Modules					•				
	96 x 48							•	•	•
4 digit single display		•	•	•	•	•	•			
5 digit single display								•	•	•
Main input	Universal input	•					•	•	•	•
	J-K-S-R-T + IR + PTC-NTC		•	•	•	•				
	J-K-S-R-T + IR + Pt100		•	•	•	•				
	0/4... 20 mA o 0/1... 5 V o 0... 10V		•	•	•	•				
	Δ T PT100						•	•	•	
	Digital		2		2	2		3	3	3
	Strain gauge (5V/10V)									•
Auxiliary input	0/4... 20 mA or 0/1... 5 V or 0... 10V								•	•
Relay or voltage for SSR drive outputs		4	4	2	3	3	2	4	4	4
Analogue current or voltage outputs		1					1	1	1	1
Measuring retransmission							•		•	•
Power supply	12 Vac/Vdc		•							
	20... 30 Vac/Vdc	•								
	24 Vac/Vdc		•	•	•	•	•	•	•	•
	100... 240 Vac	•	•	•	•	•	•	•	•	•
RS485 ModBus		•	•			•	•	•	•	•
Mathematical Functions										•
MIN, MAX, HOLD PV, HOLD PICCO, MEDIA functions									•	•
CE certification + UL approval		•	•	•	•	•	•	•	•	•

TLI40

- UNIVERSAL AND POTENTIOMETER INPUT
- UP TO 4 OUTPUTS
- RS485

FEATURES

DISPLAY	TLI40
Single	4 red digit, h 12 mm
INPUTS	
Universal	Thermocouples J, K, S, B, C, E, L, N, R, T and Infrared sensors J or K + Thermoresistances Pt 100 3 wires + Thermistors PTC KTY 81-121 (990 Ω a 25°C) e Thermistors NTC 103AT-2 (10 kΩ a 25°C) + Linear signals 0... 50mV, 0... 60mV, 12... 60mV, 0/4... 20mA, 0/1... 5V, 0/2...10V + Linear Potentiometers (see next page for temperature ranges)
Accuracy	±0.15% fs
OUTPUTS	
Up to 4	OUT 1, OUT 2, OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 2A-AC3/250 Vac) or 7mA/14 Vdc to drive SSR
Current or voltage (as atternative to OUT 1)	OUT 1: 0/4...20mA or 0/2...10V
Auxiliary power supply	12 Vdc/20 mA max 2.5 Vdc/2.5 mA for Linear Potentiometers
FUNCTIONAL	
Sampling rate	Selectable from 8 to 64 samples per second for analogue signals or potentiometer inputs
Resolution	8 samples/sec = 32000 points 16 samples/sec = 16000 points 32 samples/sec = 8000 points 64 samples/sec = 4000 points
Accuracy	±0,15% fs
Serial communication	RS485 with ModBus-RTU (JBUS) protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac ±10% / 50/60 Hz
Power consumption	8 VA approx.
Dimensions / Weight	48 x 48 mm - depth 98 mm / 190 g approx.
Connections	Screw terminal block 2 x 1 mm²
Mounting	Flush in panel in 45 x 45 mm hole
Front protection degree	IP 54 , mounted on panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive CEE EMC 2004/108/CE (EN 61326), Directive CEE BT 2006/95/CE (EN 61010-1)

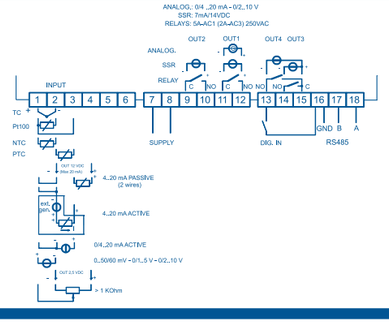
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

TLI40	CODE
POWER SUPPLY	
20... 30 Vac/Vdc	L
90... 240 Vac	H
OUT 1	
Relay	R
20 mA/14 Vdc for SSR driving	0
0/4... 20mA	C
0/2... 10V	V
Not available	-
OUT 2	
Relay	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Relay	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION AND DIGITAL INPUT	
RS485	S
RS485 + Digital input	I
Not available	-
SENSOR POWER SUPPLY	
2.5 Vdc	B
12 Vdc for analogue input	A
INPUT FROM POTENTIOMETER	
Available	-P
Not available	--

CONNECTIONS

TLI40



TEMPERATURE RANGES

TEMPERATURE RANGES		
INPUT	WITHOUT "DP" (DECIMAL POINT)	WITH "DP"= 1, 2, 3
tc J	-160 ... 1000 °C - 256 ... 1832 °F	-160.0 ... 999.9 °C -199.9 ... 999.9 °F
tc K	-270 ... 1370 °C - 454 ... 2498 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc S	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc B	72 ... 1820 °C 162 ... 3308 °F	72.0 ... 999.9 °C 162.0 ... 999.9 °F
tc E	-150 ... 750 °C -252 ... 1382 °F	-150.0 ... 999.9 °C -199.9 ... 999.9 °F
tc L	-150 ... 900 °C -252 ... 1652 °F	-150.0 ... 900.0 °C -199.9 ... 999.9 °F
tc N	-270 ... 1300 °C -454 ... 2372 °F	-199.9 ... 999.9 °C -199.9 ... 999.9 °F
tc R	-50 ... 1760 °C -58 ... 3200 °F	-50.0 ... 999.9 °C -58.0 ... 999.9 °F
tc T	-270 ... 400 °C -454 ... 752 °F	-199.9 ... 400.0 °C -199.9 ... 752.0 °F
tc C	0 ... 2320 °C 32 ... 4208 °F	0.0 ... 999.9 °C 32.0 ... 999.9 °F
IR sensors (ZIS)	-46 ... 785 °C -50 ... 1445 °F	-46.0 ... 785.0 °C -50.8 ... 999.9 °F
Pt100 (IEC)	-200 ... 850 °C -328 ... 1562 °F	-99.9 ... 850.0 °C -99.9 ... 999.9 °F
PTC (KTY81-121)	-55 ... 150 °C -67 ... 302 °F	-55.0 ... 150.0 °C -67.0 ...302.0 °F
NTC (103-AT2)	-50 ... 110 °C -58 ... 230 °F	-50.0 ... 110.0 °C -58.0 ... 230.0 °F
0... 20 mA	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99
4... 20 mA	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 50 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 60 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
12... 60 mV	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 5 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
1... 5 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
0... 10 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
2... 10 V	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999
Potentiometers (> 1 KΩ)	-1999 ... 9999	-199.9 ... 999.9 -19.99 ... 99.99 -1.999 ... 9.999

K 31V/38V

- PROGRAMMABLE INDICATORS
- UP TO 4 OUTPUTS FOR ALARMS MANAGEMENT
- SERIAL COMMUNICATION RS485 OR TTL MODBUS

FEATURES

DISPLAY	K31V	K38V
Single	4 red digit, h 12 mm + 3 LEDs Bargraph	
INPUTS		
4 different configurations	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) e Infrared sensors J or K + Thermoresistances Pt 100 3 wires (-200.. 850°C/-328... 1562°F)	
	Thermocouples: J (0... 1000°C / 32... 1832°F), K (0... 1370°C / 32... 2498°F), S,R (0... 1760°C / 32... 3200°F), T (0... 400°C / 32... 752°F) and Infrared sensors J or K + Thermistors: PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C / -67... 302°F) and Thermistors: NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C / -58... 230°F)	
	Linear signals 0/4... 20mA	
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V	
Digital inputs	2 for free voltage contacts	--
OUTPUTS		
Up to 4 (K31V) Up to 2 (K38V)	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR OUT 3 and OUT 4: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR	OUT 1 and OUT 2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ±20% 20 mA max. to drive SSR
Auxiliary power supply	12 Vdc/20 mA max.	
FUNCTIONAL		
Signal retransmission	Set Point	--
Serial communication	RS485 with ModBus-RTU (JBUS) protocol	TTL ModBus
Baud rate	1200... 38400 baud, programmable	--
GENERAL		
Power supply	12 Vac/Vdc, 24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)	
Power consumption	6 VA approx.	
Dimensions / Weight	78 x 35 mm - depth 64 mm or 78.5 mm with plug-in terminals / 180 g approx.	78 x 35 mm - depth 64 mm / 180 g approx.
Connections	Plug-in terminals or Screw terminal block 2 x 1 mm²	Screw terminal block 2 x 1 mm²
Mounting	Flush in panel in 71 x 29 mm hole	
Front protection degree	IP 65, mounted on panel with gasket	
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	Direttive EMC 2004/108/CE (EN 61326-1), Direttive BT 2006/95/CE (EN 61010-1)	

HOW TO ORDER

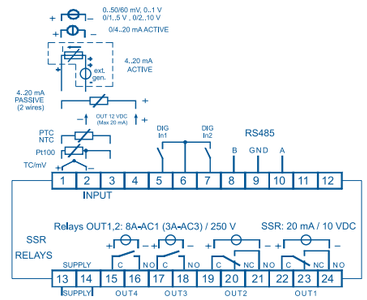
To compose the part number, pls. choose one of the option for each variable

K31V	CODE
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 4	
Relay SPST-NO 5A-AC1	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL ModBus	-

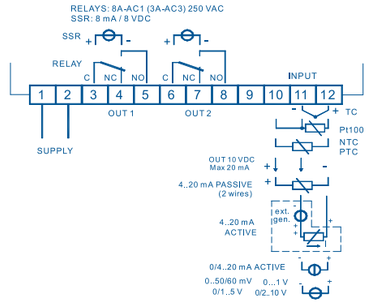
K38V	CODE
POWER SUPPLY	
12 Vac/Vdc	F
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-

CONNECTIONS

K31V

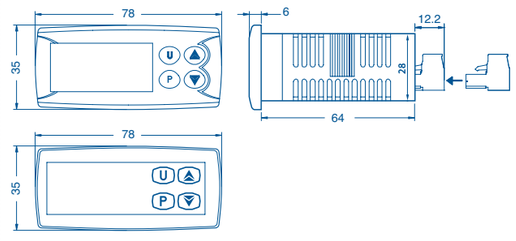


K38V



DIMENSIONS

K31V / K38V



The dimensions are expressed in mm

K48V

- INDICATOR
- UP TO 3 OUTPUTS FOR ALARM INDICATION
- TTL SERIAL COMMUNICATION

FEATURES

DISPLAY	K48V
Single	4 red digit, h 7mm
INPUTS	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200.. 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts, as alternative to Out 3
OUTPUTS	
Up to 3	OUT1 and OUT2: Relay SPST-NO (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving
Auxiliary supply	12 Vdc/20 mA max.
FUNCTIONAL	
Serial communication	TTL ModBus
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions	48 x 48 mm (1/16 DIN) - depth 98 mm
Weight	180 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	Flush in panel in 45 x 45 mm hole
Front protection degree	IP65, mounted in panel with gasket
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

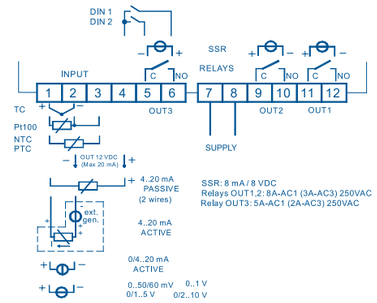
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K48V	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3	
2 digital inputs	D
Relay SPST 5A-AC1	R
Vdc for SSR driving	0
Not available	-

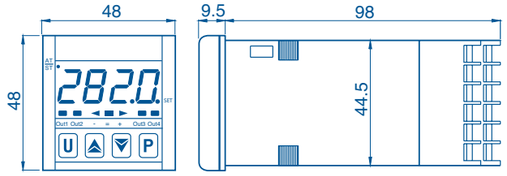
CONNECTIONS

K48V



DIMENSIONS

K48V



The dimensions are expressed in mm

K85V

- INDICATOR
- UP TO 3 OUTPUTS FOR ALARM INDICATION
- RS485 SERIAL COMMUNICATION

FEATURES

DISPLAY	K85V
Single	4 red digit, h 12 mm + 3 LEDs bargraph
INPUTS	
4 different configurations	Thermocouples (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermoresistances Pt 100 3 wires (-200.. 850°C/-328... 1562°F)
	Thermocouples J (0... 1000°C/32... 1832°F), K (0... 1370°C/32... 2498°F), S,R (0... 1760°C/32... 3200°F), T (0... 400°C/32... 752°F) and Infrared sensors J or K type + Thermistors PTC KTY 81-121 (990Ω at 25°C) (-55... 150°C/-67... 302°F) and Thermistors NTC 103AT-2 (10kΩ at 25°C) (-50... 110°C/-58... 230°F)
	Linear signals 0/4... 20mA
	Linear signals 0/10... 50mV, 0/12... 60mV, 0/1... 5V, 0/2... 10V
Digital inputs	2 digital inputs for free voltage contacts
OUTPUTS	
Up to 3	OUT1 and OUT2: Relay SPDT (8A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving OUT3: Relay SPST-NO (5A-AC1, 3A-AC3/250 Vac) or 12V ± 20% 20 mA max. for SSR driving
Auxiliary supply	12 Vdc/20 mA max.
FUNCTIONAL	
Signal retransmission	Set point
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200... 38400 baud, programmable
GENERAL	
Power supply	24 Vac/Vdc, 100... 240 Vac/Vdc ± 10% (50/60 Hz)
Power consumption	6 VA approx.
Dimensions	4 DIN rail modules, 70 x 84 mm - depth 60 mm
Weight	230 g approx.
Connections	Screw terminal block 2.5 mm²
Mounting	On OMEGA DIN A rail
Front protection degree	IP 40, for internal use
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)
Operating humidity	30... 95 RH% without condensation
Conformity	Directive EMC 2004/108/CE (EN 61326-1), Directive BT 2006/95/CE (EN 61010-1)

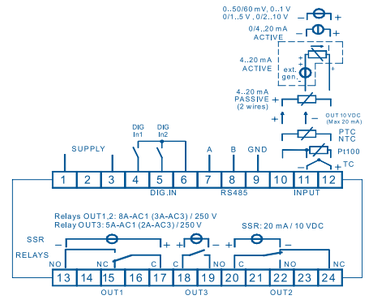
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

K85V	CODE
POWER SUPPLY	
24 Vac/Vdc	L
100... 240 Vac/Vdc	H
INPUT	
TC,PT100,mV	C
TC,PTC,NTC,mV	E
0/4... 20mA	I
0... 1V, 0/1... 5V, 0/2... 10V	V
OUT 1	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
OUT 2	
Relay SPDT 8A-AC1	R
Vdc for SSR driving	0
Not available	-
OUT 3	
Relay SPST 5A-AC1	R
Vdc for SSR driving	0
Not available	-
SERIAL COMMUNICATION	
RS485	S
TTL Modbus	-
DIGITAL INPUTS	
2 digital inputs	D
Not available	-

CONNECTIONS

K85V



DIMENSIONS

K85V

The dimensions are expressed in mm

J1 / J3

- J1: 5 DIGIT INDICATOR WITH 2 ALARMS
- J3: 5 DIGIT INDICATOR WITH 2 INPUTS AND 4 ALARMS

FEATURES

DISPLAY	J1	J3
Single	5 digit programmable as red or green, h 15.5 mm	
INPUTS		
Main input (IN1)	Thermocouples: L/J (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F) B (0... +1800°C / 32... 3272°F), N (0... +1200°C / 32... 2192°F), E (0... +600°C / 32... +1112°F), Ni-NiMo (0... +1100°C / 32... +2012°F), W3/W5 (0... +2000°C / 32... 3632°F) Thermoresistances: PT100 (-200... +600°C / -328... +1112°F) Linear signals: 0/10... 50 mV; 0/4...20 mA (shunt) Infrared sensors or special ranges (custom)	
Auxiliary input (IN2)	--	0/4...20 mA o 0/1...5 V, 0...10 V
Digital inputs	3, logic type not isolated	
Accuracy	0.25% ±1 digit (thermoelements) or 0.1% ±1 digit (for mA and mV)	
OUTPUTS		
Up to 2 (J1) Up to 5 (J3)	OUT 1: Relay SPDT 2A/250Vac (4A/120Vac) for resistive loads OUT 2: Relay NO 2A/250Vac (4A/120Vac) for resistive loads	OUT 1: Relay SPDT 2A/250Vac (4A/120Vac) for resistive loads OUT 2 and OUT 3: Relay NO 2A/250Vac (4A/120Vac) for resistive loads OUT 4: Logic not isolated 0/5 Vdc ±10% 30mA max. or Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 5: 0/4...20 mA for inputs retransmission
Auxiliary power supply	24 Vdc (±20%)/30 mA max. for external transmitter	
Outputs configuaration	2, programmable as alarm	4, programmable as alarm
FUNCTIONAL		
Special functions	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying IN1, IN2, CIN (conditioned input), Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function
Update measurement time	0.7 sec	
Sampling rate	1.5 sec	
Signal retransmission	--	Measurement
Serial communication	RS485 with Modbus RTU protocol	
Baud rate	1200, 2400, 4800, 9600 baud	
GENERAL		
Power supply	100...240Vac (-15...+10%) or 24Vac (-25...+12%) or 24Vdc (-15...+25%) (50/60 Hz)	
Power consumption	5 VA approx.	
Dimensions / Weight	96 x 48 mm (1/8 DIN), depth 110 mm / 250 g approx.	
Mounting	Flush in panel in 92 x 45 mm hole	
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)	
Front protection degree	IP65	
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)	
Operating humidity	5... 95% RH without condensation	
Conformity	EN61010-1 (IEC1010-1)	

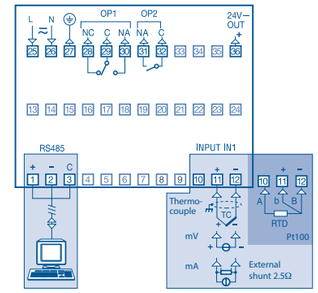
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

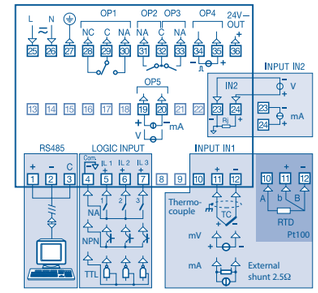
J1/J3	CODE
POWER SUPPLY	
100... 240 Vac	3
24 Vac/Vdc	5
OUT 1, OUT 2, OUT 3 AND OUT 4	
Not available	0
Relay-Relay-Relay-SSR (J3 only)	1
Relay-Relay	7
Relé-relé-relé-relé (J3 only)	9
SERIAL COMMUNICATION	
Not available	0
RS485	5
SPECIAL FUNCTIONS	
Not available	0
OUT 5 retransmission (J3 only)	1
Input IN2 (J3 only)	2
OUT 5 retransmission + IN2 (Solo J3)	5
SPECIAL FUNCTIONS	
Not available	0
INSTRUCTION MANUAL	
Italian/English	0
Not available	9
FRONT FRAME COLOUR	
Dark grey (std)	0
Dark grey shunt 0.1%	2
SPECIAL EXECUTION	
Not available	0
Conformal coating	3

CONNECTIONS

J1

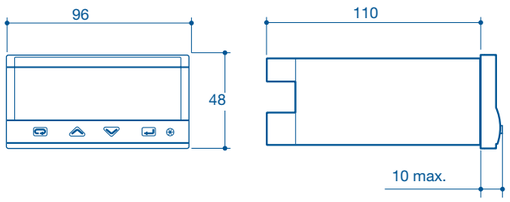


J3



DIMENSIONS

J1 / J3



The dimensions are expressed in mm

J5

- INDICATOR-TRANSMITTER
- STRAIN GAUGE INPUT FOR MELT PRESSURE AND LOAD CELLS

FEATURES

DISPLAY	J5
Single	5 digit programmable as red or green, h 15.5 mm
INPUTS	
Main input (IN1)	0...20/50/100 mV, 0...1/5/10 V, 0/4...20 mA, strain gauge: from 350 Ω, with bridge excitation 5 V or 10 V
Auxiliary input (IN2)	0/4...20 mA or 0/1...5 V, 0...10 V
Digital inputs	3, logic type not isolated
Accuracy	0.1% ±1 digit (for mA and mV)
OUTPUTS	
Up to 5	OUT 1: Relay SPDT, 2A/250Vac (4A/120Vac) for resistive loads OUT 2: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 3: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 4: Relay NO, 2A/250Vac (4A/120Vac) for resistive loads OUT 5: 0/4...20 mA for inputs retransmission
Auxiliary power supply	24 Vdc (±20%)/30 mA max. for external transmitter
Outputs configuaration	4, programmable as alarm
FUNCTIONAL	
Special functions	Quick Setup using numerical code, "ISA A" Alarm acknowledge sequence, Displaying IN1, IN2, CIN (conditioned input), Displaying max. and min. values, Display locked / timed, Peaks and valleys, Dedicated key for alarms recognition, Sensor break, Alarms acknowledgement (latching), Inhibition at power-on, OR function
Update measurement time	20 ms
Sampling rate	0.5 sec
Signal retransmission	Measurement
Serial communication	RS485 with Modbus RTU protocol
Baud rate	1200, 2400, 4800, 9600, 19200, 36400, 56800 baud
GENERAL	
Power supply	100...240Vac (-15...+10%) or 24Vac (-25...+12%) or 24Vdc (-15...+25%) (50/60 Hz)
Power consumption	5 VA approx.
Dimensions / Weight	96 x 48 mm (1/8 DIN), depth 110 mm / 250g approx.
Mounting	Flush in panel in 92 x 45 mm hole
Connections	Screw terminal block M3 for cables with section 1 mm² (18AWG)
Front protection degree	IP65
Operating / storage temperature	0... 50°C (32... 122°F) / -30... 70°C (-22... 158°F)
Operating humidity	5... 95% RH without condensation
Conformity	EN61010-1 (IEC1010-1)

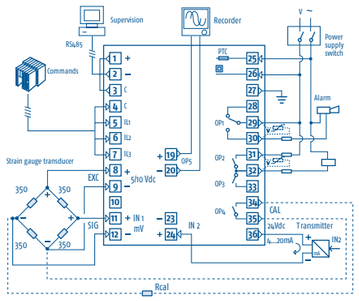
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

J5	CODE
POWER SUPPLY	
100... 240 Vac	3
24 Vac/Vdc	5
OUT 1, 2, 3 E 4	
Relay-Relay	7
Relay-Relay-Relay-Relay	9
SERIAL COMMUNICATION	
Not available	0
RS485	5
SPECIAL FUNCTIONS	
Not available	0
OUT 5 retransmission	1
Input IN2	2
OUT 5 retransmission+ IN2	5
SPECIAL FUNCTIONS	
Not available	0
INSTRUCTION MANUAL	
English	8
Not available	9
SPECIAL EXECUTION	
Not available	0
Conformal coating	3

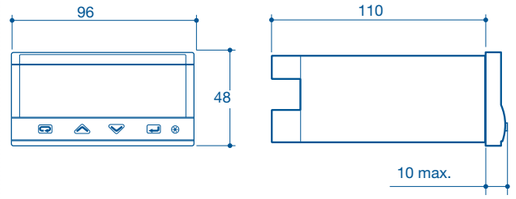
CONNECTIONS

J5



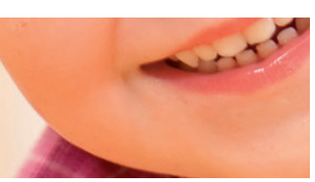
DIMENSIONS

J5



The dimensions are expressed in mm

ACQUISITION AND DATA RECORDING



I/O MODULES

Data acquisition modules in Modbus RTU and CANOpen

Many typologies of digital and analogue inputs and outputs.

I/O MODULES

FEATURES		AI				AI		AO	
		02UI	04RT	08TC		08HL	08DP	08HL	08DP
Dimensions (mm)	Single module (76 x 110 mm)	•	•	•		•	•	•	•
Input channels		2	4	8		8	8		
Output channels								8	8
Type of inputs	Thermocouples J,K,N,S,R,T	•	•	•					
	RTD PT100 and PT1000	•	•						
	Current (mA)	•				•	•	•	
	Voltage (mV)	•	•	•					
	Voltage (V)	•				•	•	•	•
	Potentiometer	•							
	Dual polarity	•					•		•
Resolution 16 bit		•	•	•		•	•	•	•
Accuracy 0.1%		•	•	•		•	•	•	•
Power supply 24 Vdc		•	•	•		•	•	•	•
Fast aquisition		•				•	•	•	•
CANOpen protocol		•	•	•		•	•	•	•
Modbus RTU protocol			•	•		•		•	•
CE certification + UL approval (listed)		•	•	•		•	•	•	•

FEATURES		DI			DM			DO						
		16LV	16HV	32LV	08TS		16TS	32TS	16TS	16TP	32TR	32TS	04RL	04TX	08RL
Dimensions (mm)	Single module (76 x 110 mm)	•	•		•		•		•	•	•		•	•	
	Dual module (152 x 110 mm)			•				•				•			•
Input channels		16	16	32	8		8	16							
Output channels							8	16	16	16	32	32	4	4	8
Inputs	24 Vdc	•		•	•		•	•	•	•		•			
	120 Vac		•												
Outputs	24 Vdc				•		•	•	•	•		•		•	
	250 Vac												•		•
	Relay										•		•		•
Outputs 2A										•			•		•
Outputs 6A														•	
Power supply 24 Vdc		•	•	•	•		•	•	•	•	•	•	•	•	•
CANOpen protocol		•	•	•	•		•	•	•	•	•	•	•	•	•
Modbus RTU protocol		•			•				•						
CE certification + UL approval (listed)		•	•	•	•		•	•	•	•	•	•	•	•	•

FEATURES		TDA	
		04	08
Dimensions (mm)	4 Din modules (70 x 85 mm)	•	•
Input channels		4	8
Inputs	PTC, NTC or Pt1000		•
	4...20 mA	•	
	0... 10 V	•	
	Digitals	•	•
Power supply 24, 110, 230 Vac		•	•
CE certification		•	•

D7/D8/D9

- ANALOGUE AND DIGITAL ACQUISITION MODULES
- ANALOGUE UNIVERSAL TRANSMITTER WITH ALARMS
- RS485

FEATURES

INPUTS	D7	D9	D8
Number of inputs	1	2	--
Input configuration	Thermocouples: L/J/E (0... +600°C / 32... +1112°F), T (-200...+400°C / -328...+752°F), K/N (0...+1200°C / 32...+2192°F), S/R (0... +1600°C / 32...2912°F), B (0... 1800°C / 32... 3272°F), Ni-NiMo (0... 1100°C / 32... 2012°F), W3, W5 (0... 2000°C / 32... 3632°F)) Thermoresistances: PT100 (-99.9... 300.0°C / -99.9... 572.0°F and -200... 600°C / -328... 1112°F) Linear signals: 0/10...50 mV; 0/4...20 mA (shunt) Infrared sensors or programmable on special ranges (custom)		--
Accuracy	0.25% ±1 digit (thermoelements); 0.1% ±1 digit (mA and mV)		--
Digital inputs	1 voltage digital input	1 voltage digital input (+ 2 configurables)	6 digital inputs in voltage or for free voltage contacts, in 2 groups optoisolated (1 and 2 in Hz)
OUTPUTS			
Outputs OUT1-OUT2	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac) / SSR, 1A res./250Vac	OUT1 and OUT2: Relay NO, 2A res./250Vac (4A res./120Vac)/SSR, 1A res./250Vac, logic 0/5 Vdc, not insulated	
Outputs OUT3-OUT4	--	OUT3 and OUT4: logic 0/5 Vdc, not insulated	--
Output OUT5	OUT5: 0/4... 20 mA, 15V max.	--	
Outputs functions	--	NOT	NOT, PWM, Hold
Auxiliary supply	+24dc, ±20%, 30 mA max. - to supply an external transmitter	--	
Outputs configuration	Up to 3 alarms	Up to 4 alarms	--
Alarm functions	Sensor break, Latching/Blocking, Loop break, Heater break associated to the timer (if available)		--
FUNCTIONAL			
Setpoint	Reference value	Reference value	--
Special functions (optionals)	--		NOT, Toggle, Flip-Flop
Front indication LEDs	3 red (DO) + 1 green (PWR/COM)	4 red (DO) +1 green (PWR/COM)	6 yellow (DI), 2 red (DO), 1 green (PWR/COM)
Unit of measurement	°C/°F or engineering units (-999... 9999)		--
Signal retransmission	Measure or setpoint retransmission (reference value)	--	
Serial communication	Isolated RS485 with Modbus RTU protocol		
Baud rate	RS 485 (MASTER or SLAVE) 1200, 2400, 4800, 9600 bit/s 3 wires		
Parameters access	Through serial line and supervision software		
GENERAL			
Power supply	24Vac (-25...+12%), 24Vdc (-15...+25%) (50/60Hz)		
Power consumption	4 VA max.	5 VA max.	4 VA max.
Dimensions	22.5 x 99, depth 114.5 mm		
Weight	155 g approx.	156 g approx.	152 g approx.
Connections	PWS and COM: 0.08... 1.5 mm² (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm² (AWG24 - AWG12)		
Mounting	On OMEGA DIN A rail		
Protection degree	IP20 (terminal block)		
Operating / storage temperature	0... 50°C (32... 122°F)/-30... 70°C (-22... 158°F)		
Operating humidity	5... 95 RH% without condensation		
Conformity	EN61010-1 (IEC1010-1)		

Note: these modules can be inserted into Profibus DP and DeviceNet nets, together with a DX module, with the possibility of automatic reconfiguration.

CE

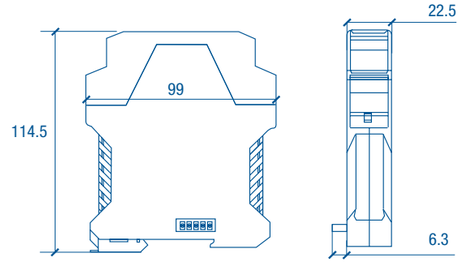
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

D7/D8/D9	CODE
POWER SUPPLY	
24 Vac/Vdc	5
OUT 1 AND OUT 2	
Relay (D7 only)	0
Relay-Relay	1
Relay-Logic (D8 and D9 only)	2
Logic-Logic (D8 and D9 only)	3
Triac-triac (D8 and D9 only)	4
Triac-Logic (D8 and D9 only)	5
SERIAL COMMUNICATION	
RS485	5
OPTION 1	
Not available	0
Continuous output (D7 only)	5
SPECIAL FUNCTIONS	
Not available	0
INSTRUCTION MANUAL	
Italian / English	0
Not available	9
OPTION 2	
Shunt 1% (D7 and D9 only)	0
Shunt 0.1% (D7 and D9 only)	2
OPTION 3	
Not available	0
Conformal coating	3

DIMENSIONS

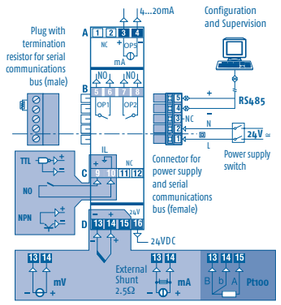
D7 / D8 / D9



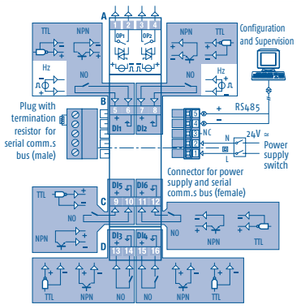
The dimensions are expressed in mm

CONNECTIONS

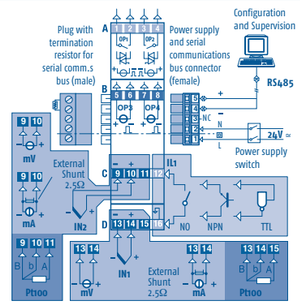
D7



D8



D9



ANALOGUE I/O

- ANALOGUE ACQUISITION MODULES
- UP TO 8 INPUTS AND 8 OUTPUTS

FEATURES

INPUTS	AI-02UI	AI-08TC	AI-04RT	AI-08HL	AI-08DP	AO-08HL	AO-08DP
Number of inputs	2	8	4	8			
Type of inputs (see table on next page for input ranges)	Universal: RTD, TC, mA, mV, V, potentiometer	TC, mV	RTD, TC, mV	mA, V	mA, V dual polarity	--	
Accuracy	0.1%						
OUTPUTS							
Number of outputs	--					8	
Type of outputs						mA, V	V dual polarity
FUNCTIONAL							
Modbus protocol	--	Available			--	Available	--
CANOpen protocol	Available						
Serial communication	RS 485, with dual connector RJ45						
Resolution	16 bit						
Isolation class	2500 V	800V					
Aquisition time	20 ms	60 ms	120 ms	10 ms		20 ms	
GENERAL							
Power supply	24Vdc (-15...+25%) (50/60Hz)						
Power consumption	4 VA max.						
Dimensions / Weight	110 x 66 mm, depth 76 mm / 220 g approx.						
Mounting	On OMEGA DIN A rail						
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals						
Protection degree	IP20 (terminal block)						
Operating / storage temperature	0... 55°C/ -20... 85°C (32... 131°F / -4... 185°F)						
Operating humidity	5... 95% RH% without condensation						
Conformity	EN 50081-2, EN 50082-2, EN 61010						

HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS I	CHANNELS O
ANALOGUE INPUTS				
IO-CBAIo2UI	CANOpen	RTD, Tc, mA, mV, V, potentiometer	2	
IO-CBAIo4RT	CANOpen	RTD, Tc, mV	4	
IO-MBAIo4RT	Modbus	RTD, Tc, mV	4	
IO-CBAIo8TC	CANOpen	TC, mV	8	
IO-MBAIo8TC	Modbus	TC, mV	8	
IO-CBAIo8HL	CANOpen	mA,V unipolar	8	
IO-MBAIo8HL	Modbus	mA,V unipolar	8	
IO-CBAIo8DP	CANOpen	V dual polarity	8	
IO-MBAIo8HLTo-	Modbus	mA,V unipolar, Conformal coating	8	
ANALOGUE OUTPUTS				
IO-CBAOo8HL	CANOpen	mA,V unipolar		8
IO-MBAOo8HL	Modbus	mA,V unipolar		8
IO-CBAOo8DP	CANOpen	V dual polarity		8

ACCESSORIES

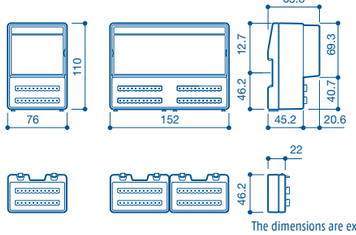
CABLES	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
POWER ADAPTORS	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
PLUGS	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
TERMINALS AND CONNECTORS	
APS2 TB2111	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

INPUT RANGE

RANGE	
Thermocouples	L/J (-200... +600°C/-328... +1112°F), T (-200...+400°C/-328...+752°F), K (-200...+1370°C/328...+2498°F), N (0... +1300°C/32... 2372°F), S (0... +1760°C/ 32... +3200°F), R (0... +1600°C/32...2912°F)
Thermoresistances	PT100/PT1000 (-200... +600°C/-328...+1112°F)
Linear signals	0...100 mV, 0...1000 mV, ±100mV, ±1000mV
	±50 mV, ±300, ±1.0 V
	mA, (0,4... 20 mA), V (0...10V)
Potentiometer	100...10K Ω

DIMENSIONS

ANALOGUE I/O



The dimensions are expressed in mm

DIGITAL I/O

- DIGITAL ACQUISITION MODULES
- UP TO 32 INPUTS AND 32 OUTPUTS
- RS485

FEATURES

INPUTS	DI-16LV	DI-16HV	DI-32LV	DO-16TS	DO-16TP	DO-32TS
Number of inputs	16		32	--		
Type of inputs	24 Vdc	115 Vac	24 Vdc			
OUTPUTS						
Number of outputs	--			16		32
Voltage				24 Vdc		
Current				500 mA	2 A	500 mA
FUNCTIONAL						
Modbus protocol	Available	--		Available	--	
CANOpen protocol	Available					
Serial communication	RS 485, with dual connector RJ45					
Isolation class	800 V	2500 V	800 V			
GENERAL						
Power supply	24Vdc (-15...+25%) (50/60Hz)					
Power consumption	4 VA max.					
Dimensions	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm
Weight	220 g		360 g	220 g		360 g
Mounting	On OMEGA DIN A rail					
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals
Protection degree	IP20					
Operating / storage temperature	0... 55°C / -20... 85°C (32... 131°F / -4... 185°F)					
Operating humidity	5... 95% RH% without condensation					
Conformity	EN 50081-2, EN 50082-2, EN 61010					

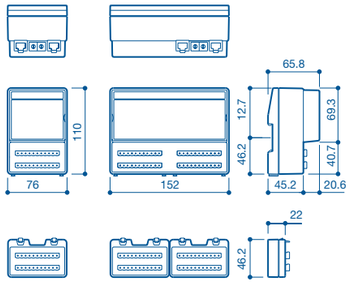
Note: through modules DX and DY, these instruments can be interfaced on Profibus, CANOpen and DeviceNet nets.

HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS	
			I	O
DIGITAL INPUTS				
IO-CBDI16LV	CANOpen	24 Vdc PNP	16	
IO-MBDI16LV	Modbus	24 Vdc PNP	16	
IO-CBDI16HV	CANOpen	24 Vdc PNP	16	
IO-CBDI32LV	CANOpen	24 Vdc PNP	32	
DIGITAL OUTPUTS				
IO-CBDO16TS	CANOpen	24 Vdc 0.5 A		16
IO-MBDO16TS	Modbus	24 Vdc 0.5 A		16
IO-CBDO16TP	CANOpen	24 Vdc 2 A		16
IO-CBDO32TS	CANOpen	24 Vdc 0.5 A		32

DIMENSIONS

DIGITAL I/O



ACCESSORIES

CABLES	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
POWER ADAPTORS	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
PLUGS	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
TERMINALS AND CONNECTORS	
APS2 TB2111	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

DIGITAL I/O

- DIGITAL ACQUISITION MODULES
- UP TO 16 INPUTS AND 16 OUTPUTS
- RS485

FEATURES

INPUTS	DO-04RL	DO-04TX	DO-08RL	DM-08TS	DM-16TS	DM-32TS
Number of inputs	--			8		16
Type of inputs	24 Vdc					
OUTPUTS						
Number of outputs	4			8		16
Relay	250 Vdc Relay	24 Vdc Relay	250 Vac Relay	--		
Voltage	--	--	--	24 Vdc		
Current	2 A (SPST) 1 A (SSR)	6 A	2 A (SPST) 1 A (SSR)	500 mA		
FUNCTIONAL						
Modbus protocol	--			Available	--	
CANOpen protocol	Available					
Serial communication	RS 485, with dual connector RJ45					
Isolation class	4000 V	800 V	4000 V	800 V		
GENERAL						
Power supply	24 Vdc (-15...+25%) (50/60 Hz)					
Power consumption	4 VA max.					
Dimensions	76 x 110 mm, depth 66 mm		152 x 110 mm, depth 66 mm	110 x 76 mm, depth 76 mm		152 x 110 mm, depth 66 mm
Weight	220 g		360 g	220 g		360 g
Mounting						
Connections	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals	2 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals		4 terminal blocks with 11 poles 5.0mm, with screws or CLAMP terminals
Protection degree	IP20					
Operating / storage temperature	0... 55°C/ -20... 85°C (32... 131°F / -4... 185°F)					
Operating humidity	5... 95% RH% without condensation					
Conformity	EN 50081-2, EN 50082-2, EN 61010					

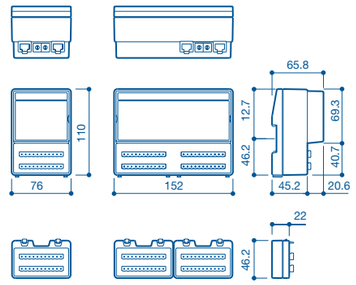
Note: through modules DX and DY, these instruments can be interfaced on Profibus, CANOpen and DeviceNet nets.

HOW TO ORDER

CODE	PROTOCOL	DESCRIPTION	CHANNELS I	CHANNELS O
RELAY OUTPUTS				
IO-CBD004RL	CANOpen	SPST-NO 2 A		4
IO-CBD004TX	CANOpen	SPST-NO 6 A		4
IO-CBD008RL	CANOpen	4 SPST-NO 2 A + 4 SPDT 2 A		8
DIGITAL I/O				
IO-CBDM08TS	CANOpen	24 Vdc PNP - 24 Vdc 0.5 A	8	
IO-MBDM08TS	Modbus	24 Vdc PNP - 24 Vdc 0.5 A	8	
IO-CBDM16TS	CANOpen	25 Vdc PNP - 24 Vdc 0.5 A	8	8
IO-CBDM32TS	CANOpen	26 Vdc PNP - 24 Vdc 0.5 A	16	16

DIMENSIONS

DIGITAL I/O

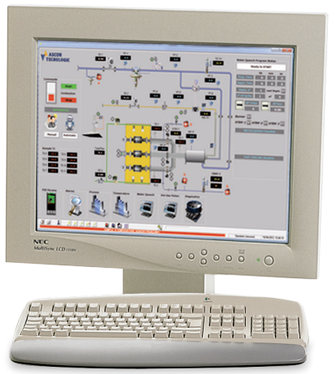


The dimensions are expressed in mm

ACCESSORIES

CABLES	
APS2 LOCALBUS76	CABLE WITH CONNECTOR RJ45 L=14 CM FOR RS485
APS2 LOCALBUS152	CABLE WITH CONNECTOR RJ45 L=22 CM FOR RS485
APS2 LOCALBUS500	CABLE WITH CONNECTOR RJ45 L=50 CM FOR RS485
POWER ADAPTORS	
APS2 ALDR75-24	POWER ADAPTOR 3.2 A
APS2 ALDR12024	POWER ADAPTOR 5 A
PLUGS	
APS2 SPINAM11	PLUG WITH 11 POLE CLAMP TERMINALS
APS2 SPINAV11	PLUG WITH 11 POLE SCREW TERMINALS
TERMINALS AND CONNECTORS	
APS2 TB2111	TERMINAL BLOCK
APS2 TERMCAN	CONNECTOR RJ45 WITH CAN TERMINAL

SUPERVISION



AutoLink, DX and DY Gateways

SCADA Software for the centralized management and the supervision of plants.
Protocol converters for the integration of the Modbus RTU instrumentation with other field bus.

SUPERVISION

		DX	DY	DY5121
Dimensions (mm)	Deltadue module (22.5 x 99 mm)	●	●	
	4 DIN rail module (70 x 85 mm)			●
Protocol	Modbus RTU	●		
	CANOpen		●	
	Profibus DP slave	●		
	DeviceNet	●		
	Modbus TCP		●	●
Functions	Multi master	2	8	4
	Backup instruments (max.32)	●		
	Data transfer (binding)	●		●
	E-mail and SMS			●
	Webserver			●
Power supply 24 Vac/Vdc		●	●	●
CE certification + UL approval (listed)		●		●

AUTOLINK

- SUPERVISION AND DATA ACQUISITION SOFTWARE

FEATURES

HARDWARE AND SOFWARE	
Hardware	Pentium II, 512 MB RAM, CD rom, resolution 800x600
Supported OS	Windows 95, 98, 2000, NT, XP, Vista, 7
COMMUNICATIONS	
Interfaces	Serial lines, USB (with adapters), Ethernet
Drivers	Modbus RTU/ASCII, Modbus TCP, RTU Remote /ASCII Remote - Allen-Bradley Df1 Full Duplex Protocol For (Plc 3 and Plc 5), Slc 500 - AVEBus - Data Stream - Decom Contrex - Eurotherm Bisynch ASCII - Gefran - Cencal - Idec Izumi - Klockner Moeller Sucom - (A and A for Ps4) - Mitsubishi Fr-Cu03 - ODBC Client - Omron (Fins, Fins in Host Link, Sysmac) - OPC Client - Red Lion PAX-1/8 DIN Counter/Rate Meter - Saia (P800 and S-Bus) - Siemens MPI, Prodave MPI Mini, Plc Simatic S5 - S7EV2001, Profibus Mater DP - (Tecnint HTE), Profibus MPI and S7 (Applicom), Profibus PPI S7 200 (Applicom), PPI S7 200 (Adapter) - Interconnections TCP/IP (Master/Slave) - Raw ASCII Output - Other available drivers
UNIQUE FUNCTIONALITIES	
Gammadue, Deltadue, Sigmadue	Device autorecognition and project automatic creation (Autolink QuickDIN)
TLK, K, R, Z, Y, X, KM, W	Device autorecognition and project automatic creation (W-Tec)
DATABASE AND FUNCTIONALITIES	
Number of variables	128, 256, 2048, 62536
Type of variables	Numerics, digitals, strings, composites
Alarms	Unlimited
Trend	Binary, DBF and CSV file types
Access levels	32
Synoptic pages	Unlimited
Alarm pages	Unlimited
Trend pages	Unlimited, max 10 traces per window
Recipes	Unlimited and customizables
Report	Up to 999
Auxiliary functions	Events schedulings, remote control, macros, multilanguages, SMS

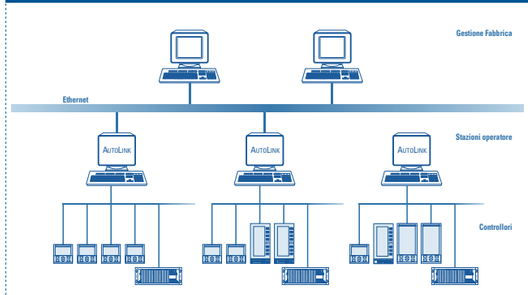
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

DEVELOPMENT AND RUNTIME SOFTWARE FOR DELTADUE, GAMMADUE AND SIGMADUE I/O MODBUS INSTRUMENTS ONLY MAX 32 INSTRUMENTS	
LSALINKDIN/USB	DEVELOPMENT/RUNTIME KEY MAX. 32 INSTRUMENTS DIN W-L
DEVELOPMENT AND RUNTIME SOFTWARE MAX. 128 VARIABLES	
LSALINKDVS/USB	DEVELOPMENT/RUNTIME KEY MAX. 128 VARIABLES DVS-W-ES
DEVELOPMENT AND RUNTIME SOFTWARE MAX. 2048 VARIABLES	
LSALINKDVM/USB	DEVELOPMENT/RUNTIME KEY MAX. 2048 VARIABLES DVM-W-EM
DEVELOPMENT AND RUNTIME SOFTWARE MAX. 65536 VARIABLES	
LSALINKDVX/USB	DEVELOPMENT/RUNTIME KEY MAX. 65536 VARIABLES DVX W-EX
RUNTIME SOFTWARE	
LSALINKRNT/USB	RUNTIME KEY MAX. 65536 VARIABLES RNT W-R

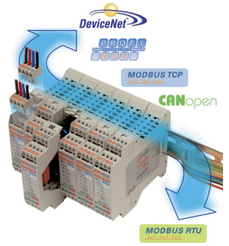
CONNECTIONS

AUTOLINK



DX/DY

• PROTOCOL GATEWAYS



FEATURES

FUNCTIONAL	DX	DY
Manager functions	Connected modules (max. 32) configuration and parameters data backup Hot swapping, automatic configuration and setup of the replaced modules.	--
Gateway functions	RS232/485 converter Protocol converter between Profibus DP SPC3, DeviceNet and Modbus RTU	Binding (data transfer) Protocol converter between CANOpen or Modbus TCP to Modbus RTU
WebSCADA functions	--	Instruments template 30 pages of 20 variables 64 alarms (e-mail and SMS with external modem, GSM or GPRS). A 64 variables log file (CSV), can be periodically send by e-mail Trend graphics (if JAVA is installed)
Communications ports	RS485 Modbus RTU master protocol (max.19200 baud) RS485, RS232 Modbus RTU slave protocol, insulated (max.38400 baud) RS485 Modbus RTU slave protocol, insulated (max. 57600 baud) RS485 Profibus DP slave (max. 12 Mb/s)	RS232 standard (for instrument configuration only) Ethernet 10/100 Mbaud, RJ45 female connector RS485 Modubus RTU (max. 115 K baud) RS485 CANOpen (max. 1 Mb/s)
GENERAL		
Power supply	24Vac (-25...+12%), 24Vdc (-15...+25%) (50/60Hz)	
Power consumption	4VA max.	
Dimensions / Weight	22.5 x 99 mm, depth 114.5 mm / 200 g approx.	
Mounting	On OMEGA DIN A rail	
Connections	PWS and COM: 0.08... 1.5 mm² (AWG28-AWG16) Inputs/Outputs: 0.2... 2.5 mm² (AWG24 - AWG12)	
Protection degree	IP20 (terminal block)	
Operating / storage temperature	0... 50°C (32... 122°F) / -20... 70°C (-4... 158°F)	
Operating humidity	5... 95% RH% without condensation	
Conformity	CE, UL, CSA, EN61010-1 (IEC1010-1)	CE, EN61010-1 (IEC1010-1)

HOW TO ORDER

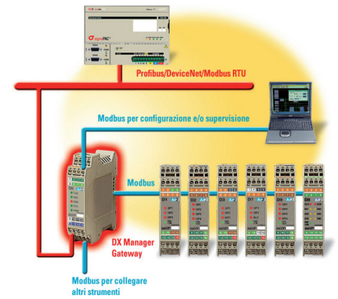
To compose the part number, pls. choose one of the option for each variable

DX	CODE
Gateway/Manager for Delta2/Gamma2 series	
POWER SUPPLY	
24 Vac/Vdc	5
NUMBER OF INSTRUMENTS IN BACKUP	
0 Instruments	0
4 Instruments	1
8 Instruments	2
16 Instruments	3
32 Instruments	4
FIELDBUS COMMUNICATION	
No fieldbus	0
DeviceNet	1
ModBus	5
ProfiBus DP	7
OPTION 1	
Not available	0
SPECIAL FUNCTIONS	
Not available	0
INSTRUCTION MANUAL	
Italian / English	0
Not available	9
OPTION 2	
Not available	0
OPTION 3	
Not available	0
Conformal coating	3

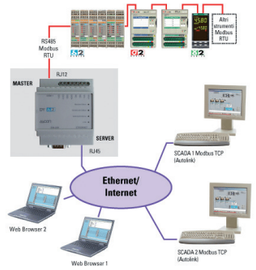
DY	CODE
PROTOCOL CONVERTER	
CAN Open/Modbus RTU - Delta2 Case	DY5030
WEB+Modbus TCP/RTU - 4 DIN Case	DY5121
TCP/RTU Modbus multiple connection - Delta2 Case	DY5220
INSTRUCTION MANUAL	
Italian / English	0
English	8

CONNECTIONS

DX

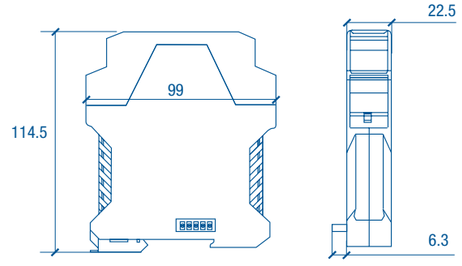


DY



DIMENSIONS

DX / DY

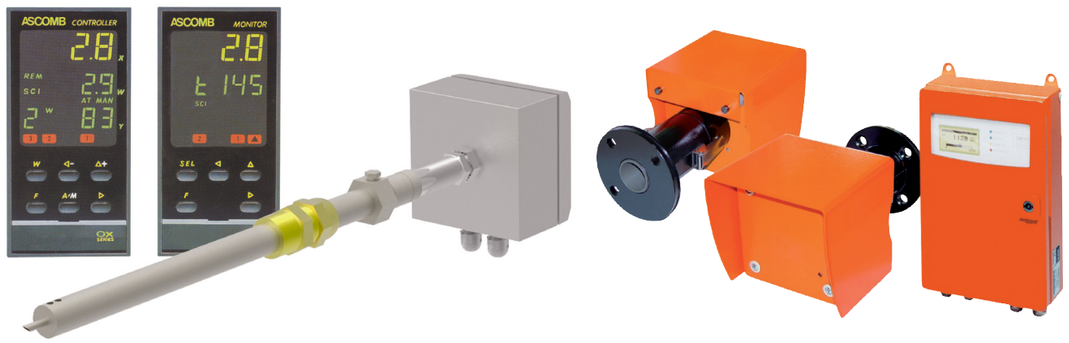


The dimensions are expressed in mm

EMISSION ANALYSIS AND COMBUSTION CONTROL

Energy saving solutions

COMBUSTION CONTROL SYSTEMS



Combustion and monitorign systems in-situ for civil and industrial power plants composed of single or multiple boilers.
In-situ probes and analyzer for continuous measurement of oxygen, smoke/air temperature and carbon monoxide in the flue gases.

ZO2-3

• ZIRCONIUM OXIDE PROBE FOR O_2 MEASUREMENT

FEATURES

GENERAL	ZO2-3I/E
Measurement type	Direct and continuous oxygen content measurement in wet flue gas
Sensor	Heated zirconium oxide ZrO2
Max. Flue gases temperature	600°C
Probe material	Stainless Steel AISI 316
Process connection	1" NPT with 1" NPT sliding nipple
Head protection	IP 66
Ambient temperature	-20°C... +55°C
Weight	2-3 Kg
Power supply	24 Vdc ±5%
Power consumption	1.2 A max.
Output	4... 20 mA active or passive output, not isolated
	Adjustable via jumpers
O_2%Measuring range	0.3% ... 25%
Accuracy	±1%
Output range 4... 20mA	0... 20.96% , 0... 25%
	Adjustable with keys
Response time	< 5 sec.
Heating up time	15 min.
Calibration	1%... 20.9%
	Trimmer calibration in ambient air
Calibration interval	12 months
Error indicator	Relay DPST, NC+NO and red led on card
	Red LED on card in case of:
	O_2% <0.3%
	probe disconnettion
	probe failure
	heater failure
	supply voltage failure
Sensor heating up time	<15s Automatic temperature control
Pluggable screw connectors	Power supply 0... 24V
	Output 4... 20mA
	Fault signal contacts
	Probe cabling (5 wires)
Operation interface	Red led, green led and 3 keys
Remote probe connection for extractive models	With supplied cable (3 m)

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

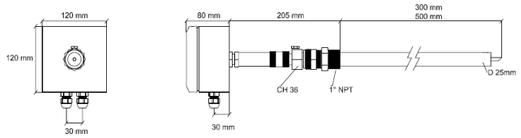
MODEL	DESCRIPTION
ZO2-3I-300	IN-SITU ZIRCONIUM OXIDE PROBE WITH INTEGRATED ELECTRONIC L=300 MM
ZO2-3I-500	IN-SITU ZIRCONIUM OXIDE PROBE WITH INTEGRATED ELECTRONIC L=500 MM
ZO2-3E-300	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIC L=300 MM
ZO2-3E-500	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIS L=500 MM
ZO2-3E-C100	IN-SITU ZIRCONIUM OXIDE PROBE WITH EXTERNAL ELECTRONIS L=100 MM

ACCESSORIES

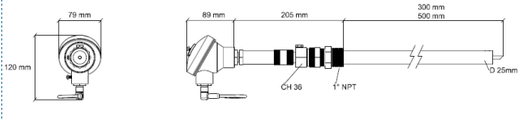
POWER ADAPTORS	
APS2 ALNDR75-24	POWER ADAPTOR 3.2 A
APS2 ALEDR12024	POWER ADAPTOR 5 A

DIMENSIONS

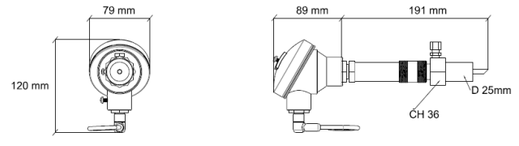
ZO2-3I 300/500



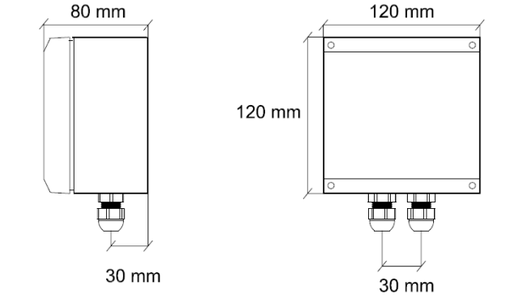
ZO2-3E-300/500



ZO2-3E-C100



REMOTE CASE FOR ZO2-3E-300/500 AND ZO2-3E-C100



OXI/OXM/OXR

- INDICATOR, MONITOR AND CONTROLLER FOR COMBUSTION CONTROL

FEATURES

INPUTS	OXI – INDICATOR	OXM – MONITOR	OXR – CONTROLLER
Main analogue input	Direct in mV from ZO probe (0.2% ±1 digit) or 4... 20 mA linearized in the range 0.0... 20.9%		
Auxiliary analogue inputs	--	2 x 4... 20 mA from smoke/air temperatures	4... 20 mA from boiler load signal
Digital inputs and functions	2 logic inputs: Hold and Fail	3 logic inputs: Hold, Fail, fuel switch	4 logic inputs: Hold, Fail, fuel switch, Set Point mem., Auto/man.
OUTPUTS			
Main analogue output	4... 20 mA/0... 10 V for O_2%	4... 20 mA/0... 10 V programmable for O_2%, T smokes, T air, CO_2%, η, λ	4... 20 mA/0... 10 V control output
Auxiliary analogue output	--		4... 20 mA/0... 10 V for O_2%
Alarm output	2 Relay NO, 250 Vac/5A programmable		3 Relay NO, 250 Vac/5 A programmable 1 Relay NO, 250 Vac/5 A Failure
FUNCTIONAL			
Serial communication (optional)	RS485 (2 wires) Mod Bus, J Bus		
Baud rate	9600 baud max.		
GENERAL			
Power supply	100... 240 Vac or 16... 28 Vac (50/60Hz) and 20...30 Vdc		
Power consumption	4 VA max.		
Dimensions / Weight	48 x 96 mm (1/16DIN) - depth 150 mm		
Mounting	Flush in panel in 45 x 92 mm hole		
Front protection degree	IP 65, mounted on panel with gasket		
Operating / storage temperature	0... 50°C (32... 122°F)/-20...+70°C (-4... 158°F)		
Operating humidity	35... 85 RH% without condensation		
Conformity	IEC801-2, 801-3, 801-4		

CE

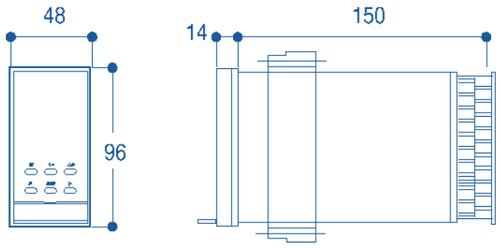
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

OXI/OXM/OXR	CODE
POWER SUPPLY	
230 Vac	3
24 Vac/Vdc	5
SERIAL COMMUNICATION	
Not available	0
20 mA Current Loop Ascon Tecnologic protocol	1
20 mA Current Loop ModBus protocol	2
RS485 ModBus protocol	3
OUT 1	
4... 20mA retransmission	1
0... 10V retransmission	2
OUT 2 (OXM AND OXR ONLY)	
Not available	0
0... 20mA retransmission	1
0... 10V retransmission	2

DIMENSIONS

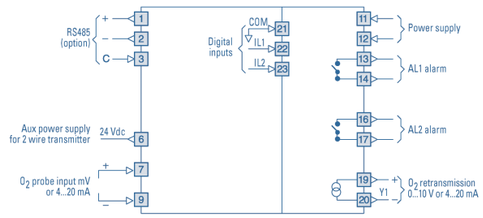
OXI / OXM / OXR



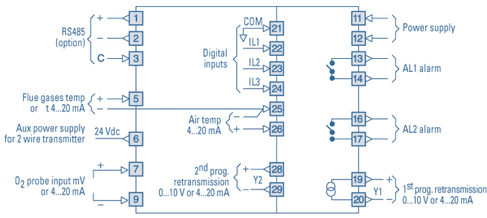
The dimensions are expressed in mm

CONNECTIONS

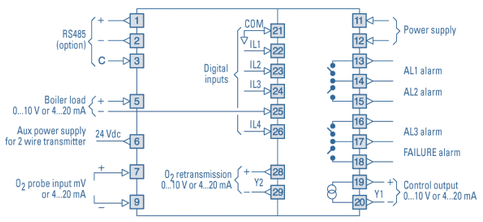
OXI



OXM



OXR



ZCO

• CO IN-SITU ANALYZER

FEATURES

GENERAL	ZCO
Measuring distance (TX-RX)	0.5 m... 8.0 m (1.6... 26 ft)
Measuring range	Programmable between 0...500 ppm and 0...20000 ppm relative to 1 mt.
Accuracy	5% f.s.
Response time	5... 360 s
Flue gas temperature	≤ 250°C (higher temperatures available with extended calibration)
Ambient temperature	-20... +55°C
Processing unit ambient temperature	0... +55°C
1 analogue input for gas temperature	0/4... 20 mA/100
1 isolated analogue output for CO retransmission	0/4... 20 mA/500 Ω max.
Digital input for plant	max. load 5V, 2 mA
2 digital alarm outputs	Fail and threshold
Outputs current	Rating 1 A , 125 Vdc, 150 Vac max. (30 VA dc or 60 VA ac)
Power supply	115/230 Vac 50/60 Hz (selectable via jumper)
Power consumption	75 VA
Protection degree	IP 65
Connection cable between transmitter-receiver	15 m
Connection cable between receiver-processing unit	2 m + extension 5 m
Air instruments	Pressure: +2 mbar compared to the pressure at chimney Consumption: 30 m³/h max.
Options	Extension cable for connecting receiver-processing unit 10 or 15 meters (maximum distance receiver-processing unit without repeater: 17 meters) Optical alignment unit
Conformity	EMC specifications in accordance with EN 50081-1 and EN 50082-2
Certifications	Guidelines VDE EN 61010 (IEC 1010-1, VDE 0411), protection class 1, degree of protection IP65 CE (EMC EC Guideline 89/336 EWG, NSP 72/23/EWG TÜV Certification (Report no. 502/0741/96-20 081751)

HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

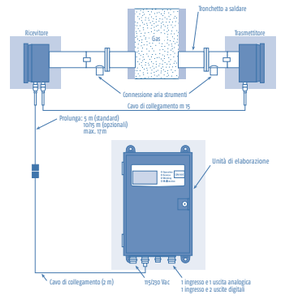
CO ANALYSIS SYSTEM COMPOSITION	CODE
1 transmitter	ZCO-IGM-901-00
1 receiver	
1 processing unit with connecting cable 2 m	
1 extension cable between receiver-processing unit 5 m	
1 connecting cable between transmitter-receiver 15 m	
2 fixing flanges with connection for air instruments	
2 welding flanges connections	
2 kit special nuts and washers	
2 gasket kits	
1 manual	
1 calibration certificate	

ACCESSORIES

ACCESSORIES	CODE
Extension cable between receiver-processing unit 10 m	AZCPROLUNGA10M
Extension cable between receiver-processing unit 15 m	AZCPROLUNGA15M
Optical alignment unit	AZC2020436
Blower with air filter 0.55Kw 220-240 Vac 50/60 Hz single-phase	AZCSOFFIANTEMGT230
Blower with air filter 0.55Kw 400 Vac 50/60 Hz three-phase	AZCSOFFIANTEMGT400

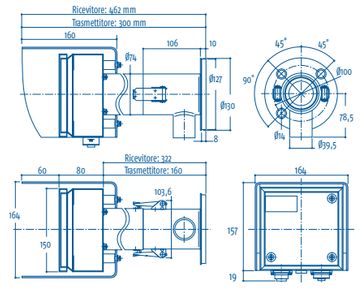
CONNECTIONS

ZCO



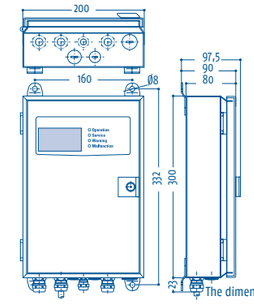
DIMENSIONS

PROBE



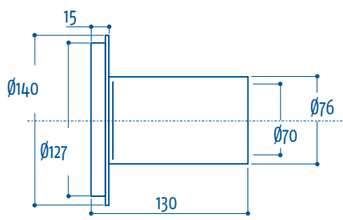
The dimensions are expressed in mm

PROCESSING UNIT



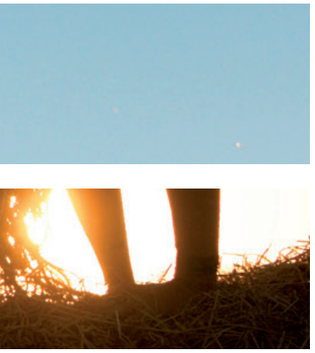
The dimensions are expressed in mm

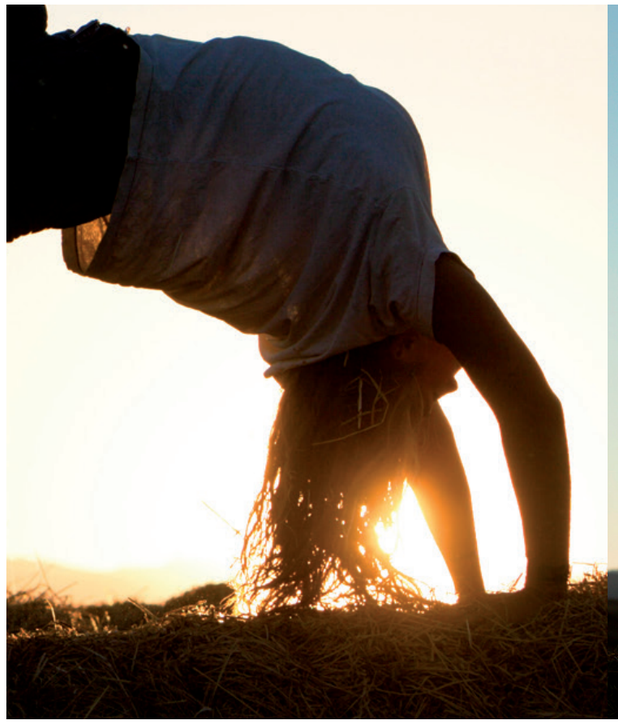
FLANGE



The dimensions are expressed in mm

ACCESSORIES





ACCESSORIES

To complete the range...

Together with our products we can also supply all the accessories of your applications: probes, sockets, gaskets, hole covers, programming keys, signal and protocol converters, front frame protections, external and current transformers, adapters and more...

A01

• UNIVERSAL PROGRAMMING KEY
FOR ASCON TECNOLOGIC INSTRUMENTS

FEATURES

FUNCTIONAL	A01
Functions	The key is able to "dialogue" with: * An instrument and to copy parameters from it to the key and vice versa * A second key and to integrally copy its parameters * A Personal computer * A Personal computer and an instrument A01 is able to recovery data from failed instruments too and permits unlimited copies of configuration, error free.
Serial communication	Interface RS485, not insulated Interface TTL, not insulated
GENERAL	
Connections	TTL male connector: JST S 5B-PH-KL TTL female connector : SAMTEC SQT-105-02-L-S RS485 connector: Phoenix MC 1,5/3-G-3.5 PWS connector : Dc power Jack 1.3mm USB connector type: Mini-USB Dip switch: 4 ways
Operating / storage temperature	0... 50°C (32... 122°F) / -20...+70°C (-4... 158°F)
Operating humidity	20... 95 RH% without condensation

CE

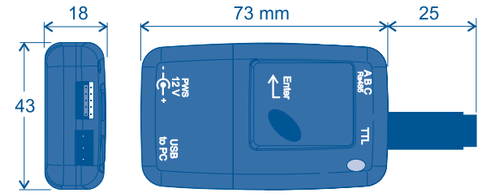
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

A01	CODE
CONNECTOR	
5 pole for 78x35, DIN rail, 72x72 series	5
3 pole for 48x48 series	3
POWER ADAPTOR	
Available	E
Not available	-
KIT FOR PC CONFIGURATION	
USB cable and SW on Cdrom support	S
Without cable and SW	-

DIMENSIONS

A01



The dimensions are expressed in mm

A30

• SIGNAL CONVERTER FROM USB/RS232/RS485 TO RS485/TTL

FEATURES

FUNCTIONAL	A30U	A30-
Interface type	From USB to RS485 auto powered From USB to TTL auto powered	From USB to RS485 From USB to TTL From RS232 to RS485 From RS232 to TTL From RS485 to RS485 From RS485 to TTL
TX/RX commutation	Automatic	
Baud rate	38400, automatic selection	
GENERAL		
Power supply	24 Vac/Vdc ±10% or 100... 240Vac (-15... +10%) (50/60 Hz)	
Power consumption	5 VA max.	
Dimensions / Weight	78x35 mm, depth 77,31 mm / 180 g	
Connections	PWS: screw terminal block (M3 screws, for cables φ 0.25 to φ 2.5 mm² or AWG 23 to AWG 14) RS232/RS485: screw terminal block (M2 screws, for cables φ 0.25 to φ 1.5 mm² or AWG 23 to AWG 16)	
Protection degree	IP20 (terminal block)	
Mounting	On OMEGA DIN A rail	
Operating / storage temperature	0... 50°C (32... 122°F)/-30...+70°C (-22... 158°F)	
Operating humidity	20... 85 RH% without condensation	
Conformity	EN61326-1, EN61010-1	

CE

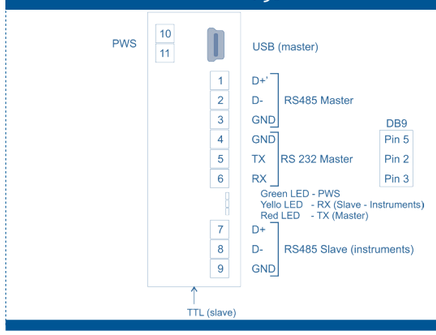
HOW TO ORDER

To compose the part number, pls. choose one of the option for each variable

A30	CODE
MODEL	
From USB to RS485 or TTL	U
From USB/RS232/RS485 to RS485 or TTL	-
POWER SUPPLY	
24 Vac/Vdc (A30 only)	L
100... 240 Vac (A30 only)	H
5V supplied by the USB port (A30U only)	-
CONNECTIONS	
Plug-in screw type	E
Plug-in screw type, fix part only	N

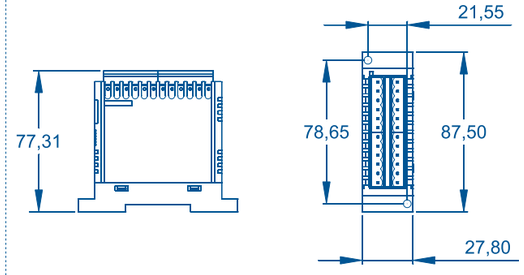
CONNECTIONS

A30



DIMENSIONS

A30



APS2 ALDR

POWER SUPPLY FOR SIGMADUE SERIES

Power supply for instruments of sigmadue series.

CODE	DESCRIPTION
APS2 ALNDR75-24	Power supply 75W - 24Vdc - 3.2 A
APS2 ALEDR12024	Power supply 120W - 24Vdc - 5 A

APS2 ATOPEH

INDUSTRIAL SWITCHES

Industrial Ethernet switches.

CODE	DESCRIPTION
APS2 ATOPEH2006	6 port Ethernet Switch - Plastic case
APS2 ATOPEH2306	6 port Ethernet Switch - Metallic case
APS2 ATOPEH2308	8 port Ethernet Switch - Metallic case

APS2 MODEM

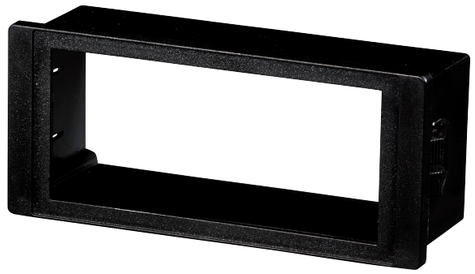
MODEM GSM/GPRS

Modem GSM/GPRS in metallic case.

CODE	DESCRIPTION
APS2 MODEMG100	Modem for OMEGA DIN A rail mounting Dimensions 73 x 54 mm, depth 25 mm Pws: 230 Vac - 12 Vdc E-GSM Quad-band 850/900/1800/1900 MHz ETSI GSM Phase 2+ Class 4 (2W@ 850/900 MHz) Class 1 (1W@ 1800/1900 MHz) Antenna GSM: SMA-F connector PWS: 5.5 - 32 Vdc (micro-FIT connector) RS232 + Audio conn. female 15-pin Sub-D

BOX-AR

ADAPTERS



Accessories used to adapt an instrument to an already existing hole, but with different mechanical measures.

CODE	DESCRIPTION
BOX 04175	Adapter for hole from 75 x 32 to 58 x 26 mm
BOX 1002	Adapter for hole from 64,4 x 32,4 to 34,3 x 15 mm
ARFQ96D	Adapter for hole from 96 x 96 to 48 x 96 mm
ARFQ96M	Adapter for hole from 96 x 96 to 48 x 48 mm

CAL

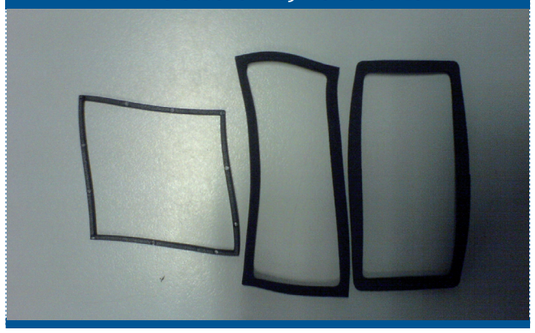
PROTECTION COVERS

Protection covers made of transparent plastic or soft rubber to protect the front of the instruments. Some models assure the IP65 protection degree.

CODE	DESCRIPTION
CAL48x48-M	48 x 48 mm (soft rubber)
CAL48x48-IP65	48 x 48 mm (Plastic - IP65)
CAL48x96-I	48 x 96 mm (Plastic)
CAL48x96-IP65	48 x 96 mm (Plastic - IP65)
CAL72x72-I	72 x 72 mm (Plastic)
CAL96x96-I	96 x 96 mm (Plastic)
CAL96x96-IP65	96 x 96 mm (Plastic)

GUAR

EXTERNAL GASKETS FOR IP65 PROTECTION DEGREE



External gaskets in neoprene mousse able to increase the instrument front protection degree.

CODE	DESCRIPTION
GUAR 6993	IP65 gasket for 65 x 33 mm front
GUAR 6927	IP65 gasket for 75 x 33 mm (old style) front
GUAR 6925	IP65 gasket for 78 x 35 mm (new style) front
GUAR 6923	IP65 gasket for 48 x 48 mm front
GUAR 6973	IP65 gasket for 48 x 96 mm front
GUAR 6974	IP65 gasket for 72 x 72 mm front
GUAR 6926	IP65 gasket for 181 x 36 mm front

TAPPO

HOLE COVER

Accessories used to cover an existing hole that it's not possible to leave empty for aesthetic reasons or protection.

CODE	DESCRIPTION
TAPPO 33X75	Cover for 75 x 33 mm hole
TAPPO 48x48-AT	Cover and box for 48 x 48 mm hole
TAPPO 48x96	Cover for 48 x 96 mm hole
TAPPO 96x96	Cover for 96 x 96 mm hole

TCTR

EXTERNAL POWER TRANSFORMERS

Accessories available with different ratio of transformation for different instrumentation demands.

CODE	DESCRIPTION
	PRIMARY/SECONDARY POWER
A	24/12 V
C	115/12V
D	230/12V
	POWER
3	3 VA
5	5 VA
10	10 VA

Other models available on request.

TLCOV

EXTENDED FRONT PLATE

Accessories that make it possible to extend the front plate of instruments 78 x 35 mm to 185 x 38 mm. Available also hole plugs and switches to cover the side holes.

CODE	DESCRIPTION
TLCOV	INSTRUMENT TO BE EXTENDED
XX	Part.no to define the instrument to be extended
	POSITION OF THE INSTRUMENT
D	Instrument mounted on the right side
S	Instrument mounted on the left side
	HOLES DIMENSIONS
--	Holes with Ø 20 mm
-1	Left hole with Ø 20 mm - Right hole with Ø 22 mm
1-	Left hole with Ø 22 mm - Right hole with Ø 20 mm
11	Holes with Ø 22 mm

TR-AMP

CURRENT TRANSFORMERS

Accessories available with different ratio of current for different instrumentation demands.

CODE	DESCRIPTION
TR-AMP-100/02	Ratio 100/0.2
TR-AMP-25/005	Ratio 25/0.05
TR-AMP-200/04	Ratio 200/0.4
TR-AMP-50/005	Ratio 50/0.05
TR-AMP-100/005	Ratio 100/0.05

ZOC

SOCKETS

Accessories available in different executions: to be soldered, with screws.

CODE	DESCRIPTION
ZOC 02203	Octal (IP20)
ZOC 02805	Octal
ZOC 02204	Undecal (IP20)
ZOC 02976	Octal with terminals to be soldered
ZOC 03110	Octal with screws

THERMOELEMENTS

- THERMOCOUPLES
- THERMORESISTANCES
- THERMISTORS
- CABLES AND ACCESSORIES

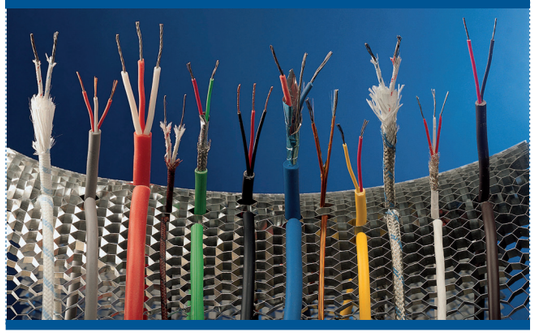
PROBES AND ACCESSORIES

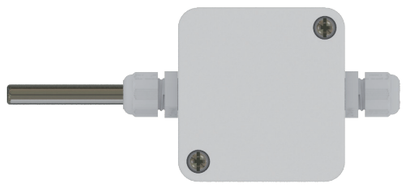
To choose correctly the probe is often decisive for the good result of the process control.
We, at Ascon Tecnologic puts at your disposition our experience and technical competence with the purpose to find the correct solution to every application problem...

Here following just some of the possible execution of our thermoelements:

- Probes for machines and small plants
- Flexible probes with MgO insulation
- High pressure probes with replaceable insertion
- High temperature probes with ceramic or methalic sleeve
- Accessories: nipple, thermowell, flanges and so on
- Compensated cables

Our technical team is avaiable to discuss your requirements for custom made products. Get in touch with us.





ANALYTICAL INDEX

A

A01 222
A30 224
AC3NP 132
APS2 ALDR 226
APS2 ATOPEH 226
APS2 MODEM 226
ANALOGUE I/O 194
AUTOLINK 204

B

BOX-AR 227
BREWERY PAC 142
BWT40 160

C

C1 36
CAL 227
CLIMA PAC 140

D

D1 88
D2 88
D3 88
D7 192
D8 192
D9 192
DIGITAL I/O 196-198
DX 206
DY 206

E

E51A 106
EP4 128

G

GUAR 227

J

J1 182
J3 182
J5 184

K

K30 78-90
K31 72
K32 72
K38 72
K39 72
K31V 176
K38V 176
K48 74
K49 74
K48V 178
K85V 180
K85 76-94
KM1 16
KM1W 18
KM3 52
KM3W 54
KM5P 56
KM5PW 58
KM7 116
KR1 22
KR1W 24
KRD3 68-92
KRD7 116
KR3 66
KR5P 70
KR7 116
KX1 20
KX3 60
KX5P 62
KX6 64
KX7 116

M

M1 38
M2 40
M3 42
M4 42
M5 80
MP-D1 134
MP-D2 134
MP-D4 134

N

NP4 126

O

OPENPCS 136
OPMT 150-152
OXI 214
OXM 214
OXR 214

P

P01 154
P04 148
P30 154
P32 154

Q

Q1 46
Q3 46
Q5 82

R

R38 26
TC49 166
TC73 166
TC030 118
TCPDE M 110
TCTR 228

T

TAPP0 228
T31 162
TC34 166
THERMOELEMENTS 230
TLC0V 228
TLI40 174
TLK33 120
TLK43 28
TLK72 30
TLK94 34
TLK96 32
TLZ35 96-104
TP34 168
TP49 168
TR-AMP 229
TT49 164
TT73 164

W

W09 108

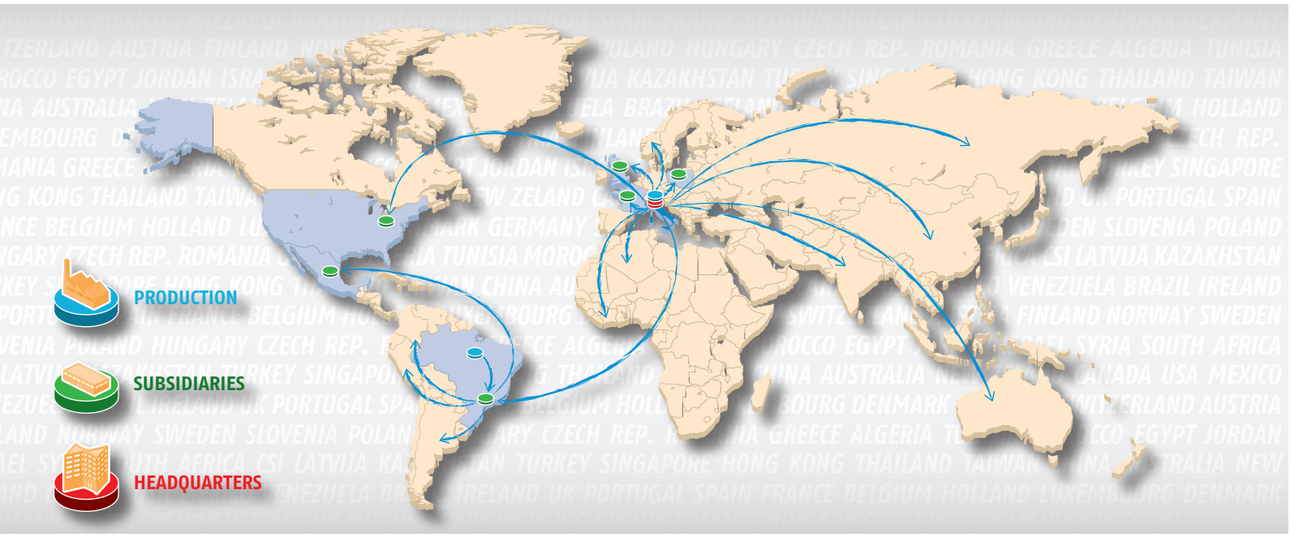
X

X1 44
X3 44
X5 82
XP4 130

Z

Z31A 102
ZC0 216
Z02-3 204
Z0C 229

NOTES



THE GROUP

Ascon Tecnologic s.r.l.
viale Indipendenza, 56 • 27029 Vigevano (PV) Italy
tel +39 0381 69 871 • fax +39 0381 69 87 30
info@ascontecnologic.com
www.ascontecnologic.com

Ascon Tecnologic France
BP 76 • 77202 • Marne La vallee Cedex 1
tel +33 1 64 30 62 62 • fax +33 1 64 30 84 98
info@ascontecnologic.fr
www.ascontecnologic.com/fr

Ascon Polska sp. z.o.o.
Kochcice ul. Kochanowicka 43
42-713 Kochanowice
tel +48 34 35 33 619 • fax +48 34 35 33 884
info@ascon.pl
www.ascon.pl

Ascon Tecnologic North America
1111 Brook Park Road
Cleveland • OH 44109
tel +1 216 485 83 50 • Fax +1 216 398 85 53
info@ascontec-na.com
www.ascontecnologic.com/en

Coelmatic ltda
Rua Clélia 1810 - Lapa
Sao Paulo • SP - CEP 05042-001- Brazil
tel +55 11 2066-3211 • fax +55 11 3046-8601
info@coel.com.br
www.coelmatic.com.br

Coelmatic Sapi Sa de Cv
Calle Praga No. 4489
Colonia Las Torres, Monterrey CP 64103
Nuevo León - Mexico
tel. +52 81 8104 1012
info@coelmatic.com.mx
www.coelmatic.com.mx

Printed in October 2020

Printed by:
Tipolitografia Vaccarone – Vigevano (PV)