

## Produktinformation

# Switch amplifier TS125 and TS225



- 1 or 2 channel version
- Safe galvanic isolation between input / output / auxiliary voltage
- Functional safety up to SIL2 EN61508
- Inputs for switching contacts, Namur initiators, or optocouplers
- Intrinsically safe inputs for connection of sensors in Ex Zones 0 and 20
- Device installation in Ex Zone 2 possible
- Galvanic isolation in accordance with the requirements for amplified isolation
- Switchable monitoring of the input circuit for wire breaks and short-circuit
- Relay outputs as normally open contacts or changeovers (invertible effect)
- Wide-range mains adapter or 24 V DC

## Characteristics

Switch amplifiers of the series TS125 and TW255 are used in switch cabinets for the conversion and isolation of digital switching signals, as well as in explosion-prone areas.

The devices are available in one- or two-channel versions. Passive sensors, such as switching contacts, Namur initiators, or passive electronic outputs of third-party devices, can be connected to the intrinsically safe inputs.

The TS125 series in 12.5 mm wide carrier rail housing offers relay outputs with output make circuit. The TW225 series in 22.5 mm wide carrier rail housing offers relay outputs with changeover function. The plug-in terminal strips enable simple and time-saving wiring. The configuration is also quick and easy with the front DIP switches.

## Technical data

### Explosion protection

Gas: II (1) G [Ex ia Ga] IIC/IIB

Dust: II (1) D [Ex ia Da] IIIC

Intrinsically safe + Zone II 3 G nA nC [ic] IIB T4 Gc X \*)

Protection rating 'n': II 3 G nA nC IIB T4 Gc X \*)

\*) Manufacturer's certificate, requires installation in an earthed, conductive housing (minimum protection rating IP54)

### Wide-range mains

Auxiliary voltage: 20..125VDC and 20..250VAC, (47..63Hz), max. 1.5W

ATEX thresholds:  $U_o = 8.7V; I_o = 19mA; P_o = 42mW$

$L_i = 20\mu H; C_i = 10nF$

IIB/IIIC:  $L_o = 100\mu H \quad 1mH \quad 100mH$   
 $C_o = 12.9\mu F \quad 7.3\mu F \quad 2.8\mu F$

IIC :  $L_o = 100\mu H \quad 1mH \quad 100mH$   
 $C_o = 2.2\mu F \quad 1.2\mu F \quad 0.4\mu F$

### 24V mains adapter

Auxiliary voltage: 24V DC +/-15%, max. 1.5W

ATEX thresholds:  $U_o = 8.7V; I_o = 17mA; P_o = 37mW$

$L_i = 20\mu H; C_i = 10nF$

IIB/IIIC:  $L_o = 100\mu H \quad 1mH \quad 100mH$   
 $C_o = 13.9\mu F \quad 7.3\mu F \quad 2.9\mu F$

IIC/IIIC:  $L_o = 100\mu H \quad 1mH \quad 100mH$   
 $C_o = 2.2\mu F \quad 1.3\mu F \quad 0.4\mu F$

### Combined data

Um (according to ATEX): 253V AC / 125V DC

Test voltage : 3kV AC between input/output/auxiliary voltage

Working temperature : -10..60°C

Storage temperature : -20..80°C

Air humidity : 10..90% (no condensation)

### Measuring inputs (in accordance with EN60947-5-6 Namur)

Open circuit voltage : approx. 8V

Short circuit voltage : approx. 8mA

Switching points : inactive <= 1.2mA, active >= 2.1mA, hyst. < > 0.5mA

### Error recognition

-Wire break : <0.2mA

-Short circuit : >7mA

### Relay outputs

Switching voltage : <250V AC <2A <500VA  
 <125V DC <0.2A <25W  
 < 30V DC <2A <60W

Switching frequency : max. 5Hz

-delay : max. 30ms

### Casing

Dimensions (WxDxH) TS125: 12.5 x 114 x 108mm  
 TS225: 22.5 x 114 x 108mm

Material : PA6.6, light grey,  
 Flammability class V0 (UL94)

Weight : TS125: 120g; TS225: 140g

Protection rating : IP20

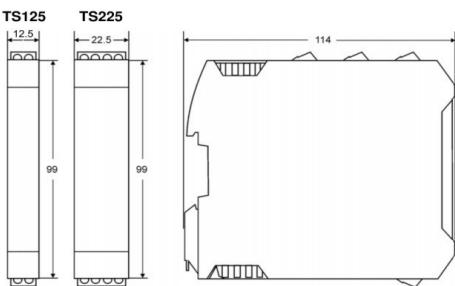
Terminals : 0.2 - 2.5mm<sup>2</sup>, AWG 24 - 14  
 Removable coded terminals

Functional safety : SIL2 in accordance with EN61508

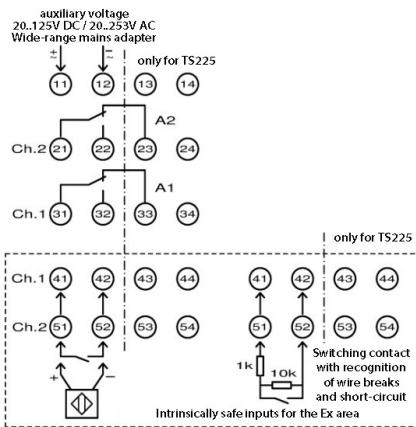
(specific data on request)

## Produktinformation

### Dimensions



### Connection diagram



### Ordering code

1. 2. 3. 4.  
 TS -  -  -  -

#### 1. Device version

125L	Housing width 12.5mm, Relay NO contacts, Auxiliary voltage 24V DC +/-15%
125LP	Housing width 12.5mm, Relay NO contacts, Auxiliary voltage 24V DC +/-15% with DIN-rail bus connector / Power Rail *)
125M	Housing width 12.5mm, Relay NO contacts, Wide-range mains adapter 20..125 VDC, 20..250 VAC
225M	Housing width 22.5mm, Relay changeover contacts, Wide-range mains adapter 20..125 VDC, 20..250 VAC

#### 2. Explosion protection

00	Installation of the device TV125L in Zone 2 permitted, in accordance with ATEX ignition protection rating 'n'
Ex	<b>With installation of the devices outside the Ex area:</b> Inputs intrinsically safe in accordance with ATEX ignition protection rating 'ia' for Zones 0 and 20 <b>The device TS125L</b> may be installed in Zone 2 in accordance with ATEX ignition protection rating 'ic'.

#### 3. Number of channels

1	Single channel
2	Dual channel
F	Single channel with additional error relay or parallel relay

#### 4. Options

00	without option
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\* Rear bus plug included

### Accessories

Art. No.	Type	Description
190109	PRVK	Power Rail 5- pole supply terminal. Connection site: left