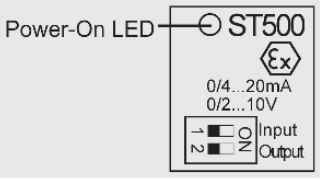
Universal isolation amplifier TV 500-Ex
Universal separator ST 500-Ex

Features

- Switch-selectable inputs
  0 / 4 ... 20 mA and 0 / 2 ... 10 V
  intrinsically safe ATEX II (1) G [Ex ia] IIC
  ATEX II (1) D [Ex iaD]
- Switch-selectable outputs
  0 / 4 ... 20 mA simultaneous 0 / 2 ... 10 V
- Supply voltage 85 ... 253 V AC or
  10 ... 30 V AC / DC
- Full 3-port isolation
- Integrated transmitter supply
  for active 2- and 3-wire sensors
  (ST500-Ex only)
- Power-on LED
- 22.5 mm case for DIN rail mounting

The isolating signal converter can be used to isolate industry standard signals 0 / 4 ... 20 mA or 0 / 2 ... 10 V DC out of the Ex area. The universal design of the in- and outputs and the wide range of supply voltage limits the devices into 2 models. The ST500Ex provides an isolated transmitter supply for direct connection of active 2- wire sensors (4 ... 20 mA) and 3-wire sensors in the Ex-area.

Front panel controls (front)



DIP-switch	0 ... 20 mA 0 ... 10 V	4 ... 20 mA 2 ... 10 V
Input	S1 OFF	S1 ON
Output	S2 OFF	S2 ON

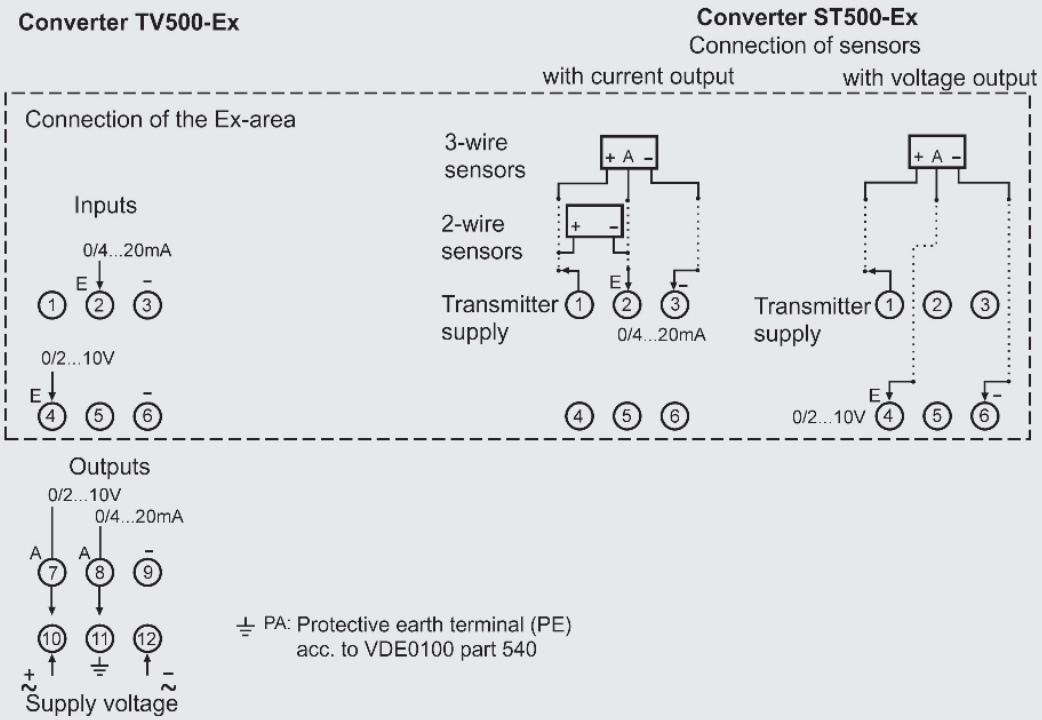
Technical data	Type: TV 500-Ex / ST 500-Ex
Power supply	
Supply voltage U_B	85 ... 253 V AC / 110 ... 125 V DC or 10 ... 30 V AC / DC
Frequency AC	40 ... 400 Hz
Power consumption	< 3,5 VA
Operating temperature	-10 ... +55 °C
Rated voltage	253 V AC or 125 V DC (Um) acc. EN 60079-0, 250 V AC acc. to EN 60664-1, degree of pollution 2 over-voltage category III between input / output / supply voltage
Test voltage	3 kV AC between input / output / supply voltage
CE-conformity	ATEX-directive 94/9/EG, European standard
(Certificate ST500ATEX.002)	EN60079-0:2006, EN60079-11:2007, EN61241-0:2006, EN61241-11:2006 EN61316-1:2004-05, EMV-directive 2004/108/EG

Universal isolation amplifier TV 500-Ex
Universal separator ST 500-Ex

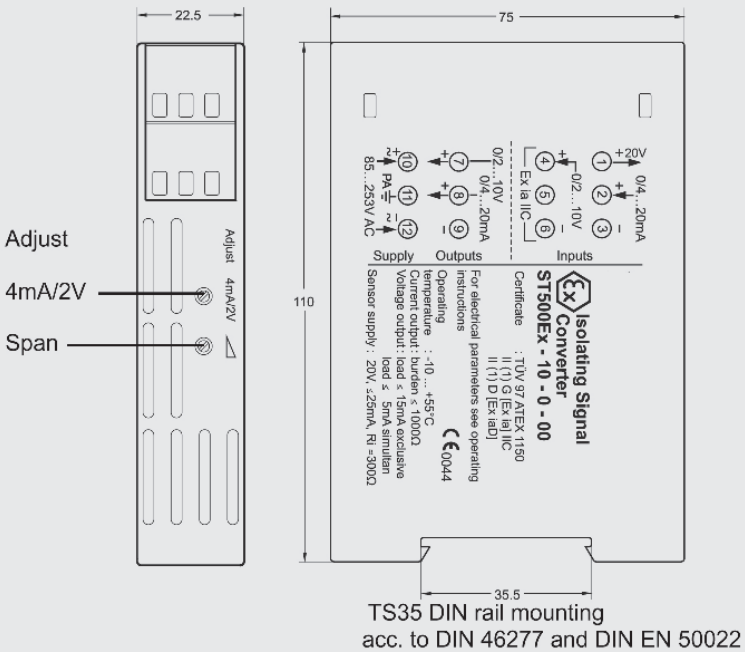
Technical data		Type: TV 500-Ex / ST 500-Ex			
Explosion protection					
Certification		TÜV 97 ATEX 1150, 2. addendum			
Protection		II (1) G [Ex ia] IIC, II (1) D [Ex iaD]			
U_0		25,2 V			
I_0		TV 500-Ex : 1 mA ST 500-Ex : 95 mA			
P_0		TV 500-Ex : < 1 mW (curve linear) ST 500-Ex : 600 mW (curve linear)			
Ignition protection class Ex ia		IIC		IIB	
L_0	TV 500-Ex	100 mH	0,5 mH	100 mH	0,5 mH
	ST 500-Ex	2 mH	0,2 mH	15 mH	1 mH
C_0	TV 500-Ex	84 nF	100 nF	460 nF	570 nF
	ST 500-Ex	47 nF	107 nF	370 nF	430 nF
The effective internal capacitances Ci and inductances Li are negligibly small. The maximum values of C0 and L0 are also allowed to be used up to the permissible limits as concentrated capacitances and as concentrated inductances (mixed circuits).					
The intrinsically safe circuits are galvanically separated from the non intrinsically safe circuits up to a peak value of the voltage of 375 V.					
Inputs					
Current input		0 / 4 ... 20 mA switch selectable, R_i = 25 Ω, overload max. 100 mA			
Voltage input		0 / 2 ... 10 V DC switch selectable, R_i ca. 40 kΩ, overload max. 100 V			
Span and start value 4 mA/2 V		Adjustable approx. ± 20 %			
Transmitter supply		Approx. 20 V DC, Ri approx. 300 Ω (ST 500-Ex only)			
Short circuit (Term. 1, 2)		Output current < 27 mA			
Outputs					
Current output		0 / 4 ... 20 mA switch selectable, max. burden 1 kΩ			
Voltage output		0 / 2 ... 10 V DC switch selectable, Max. load 15mA, short circuit protected (simultaneous to current outp. max. 5mA)			
Rated voltage		253 V AC or 125 V DC (Um) acc. to EN 60079-0 Max. permissible short circuit current of the apparatus at the output 2 A			
Rise time (T_{90})		< 100 ms			
Accuracy		< 0,3 %			
Temperature coefficient		< 0,01 % / K			
Repeat accuracy		< 0,1 %			
Supply error		< 0,1 %			
Malfunction current output 4 ... 20 mA, both DIP-switches on:					
Input →		Short circuit clamp 1, 2	Short circuit clamp 2, 3	Power interruption	Overdriving (max. 100 mA)
TV 500-Ex		23 ... 27 mA < 2,5 mA	< 2,5 mA	< 2,5 mA	Threshold 23 ... 27 mA
ST 500-Ex		100 mH	< 2,5 mA	< 2,5 mA	Threshold 23 ... 27 mA
Case					
Type		DIN rail case of polycarbonate 8020 UL94-V1			
Weight		~ 200 g			
Protection		Case IP30, terminals IP20 finger safe acc. German BGV A3			
Connection		Screw terminals with pressure plate, max. 2,5 mm² wire			
Mounting place		Mounting in dry, clean and well monitored area acc to EN60079-11:2007, part 6.1			

Universal isolation amplifier TV 500-Ex
Universal separator ST 500-Ex

Connection diagram



Dimensional drawing and controls (narrow side)



Caution!
Mounting of multiple units without distance is only permitted in horizontal orientation.