Technical Data Sheet

Theta 50

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File No. E471457

Theta 50 is used to electrically isolate input, outputs & power supply.
It fills all requirements & regulations concerning electromagnetic compatibility (EMC) & safety (IEC 61326-1 & IEC 61010-1-2010)

Special Features

- Accuracy class 0.2 as per International Standard IEC/EN 60 688
- Output Response Time < 250 ms
- Fast and easy installation on DIN RAIL or onto a wall or in panel using optional screw hole bracket.

Application

Theta 50 is used to electrically isolate input, outputs and power supply. The isolator ful fills all requirements and regulation concerning electromagnetic compatibility EMC and safety (IEC61326-1 and IEC 61010-1:2010). The device has one input and provides two independent outputs in an extremely small space.

Product Features

Electric Isolation	1) Two electrically isolated analog outputs prevent interference voltage and current. Solves grounding problem in meshed signal networks. 2) High electric isolation between input and outputs – 2.3 kV, and power supply versus all other circuits – 3.0 kV.
Function	Simple dc isolator serves to electrically isolate input dc signal in the range 0 – 20 mA or 4-20 mA or 0-10V or 2-10V is then converted to signal 0 – 20 mA or 4-20 mA or 0-10V or 2-10V.

Features	Electric isolation between input, outputs and power supply. Prevents false measurement due to spurious potentials. Processes live zero signals, provision for signal conversion. Green LED signals indicates device in operating condition. Electrical insulation between power supply versus all other circuits -3.0 kV, and between input and outputs -2.3 kV.

Technical Specifications

Reference conditions	
Ambient temperature	23°C + 2°C
Output burden	Current: 0.5 * Rext max. Voltage: 2 * Rext min.

Accuracy data (Acc to IEC 60770)	
Basic Accuracy	Limit error < ± 0.2 % including linearity and reproducibility errors.

Ambient Temperature	
Climatic rating	Climate case 3Z acc. to VDI / VDE 3540
Operating Temperature	-10 °C to 55 °C
Storage temperature	-40 °C to 70 °C
Annual mean relative humidity	< 75% standard Climatic rating.

Installation Data	
Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. to UL 94 self extinguishing, non dripping, free of halogen.
Mounting position	Rail mounting / wall mounting
Weight	Approx. 0.2kg

Influence factors	
Temperature	± 0.15% per 10 °C
Burden influence	< ± 0.1 % for current output < ± 0.1 % for voltage output
Switch-on drift	< ± 0.2%
Longtime drift	< ± 0.3% / 12 months

Measuring output 1 and output 2	
DC current standard ranges	1) 0...20mA 2) 4...20mA
Burden voltage	12V
External Resistance	Rext max. [k Ω] = 12V/ IAN [mA] I AN =Output circuit full scale value
DC voltage standard ranges	1) 0...10V 2) 2...10V
Burden	Rext min. [kΩ] = UAN [V]/ 5 mA UAN =Output circuit full scale value
Current limiter at Rext =0	Approx. 40mA for voltage output
Voltage limiter at Rext =∞	Approx. 18V for current output
Residual ripple in Output current	< 0.5% p.p.
Response time	< 50 ms

Power supply	
Rated operating voltage	60 to 300 V DC/AC
Rated operating frequency	40 to 400 Hz
Power input	≤ 2 W resp. < 4 VA

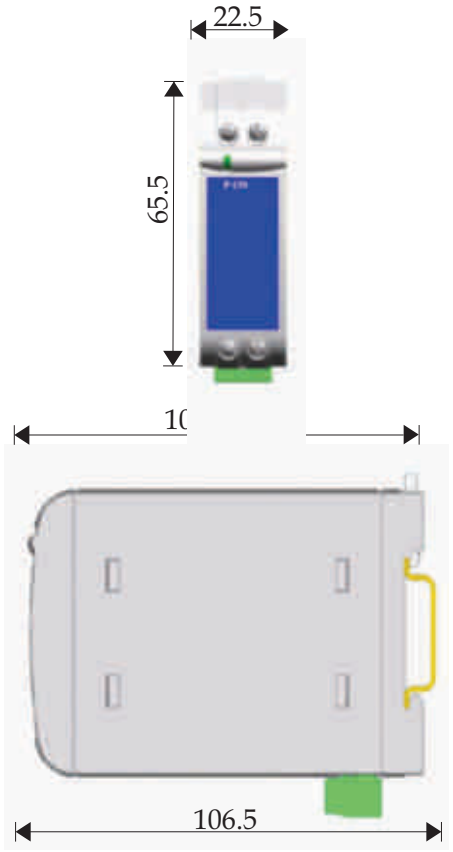
Measuring inputs	
DC current standard ranges	1) 0...20mA 2) 4...20mA 3) 1...5mA
DC voltage standard ranges	1) 0...10V 2) 2...10V 3) 1...5V

Technical Specifications

Connection Terminal	
Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	4.0mm²single wire or 2 x 2.5mm²Fine wire.
Permissible Vibrations Shocks	2 g acc. to EN 60 068-2-6 3 x 50 g 2 shocks each in 6 directions Acc. to EN 60 068-2-27

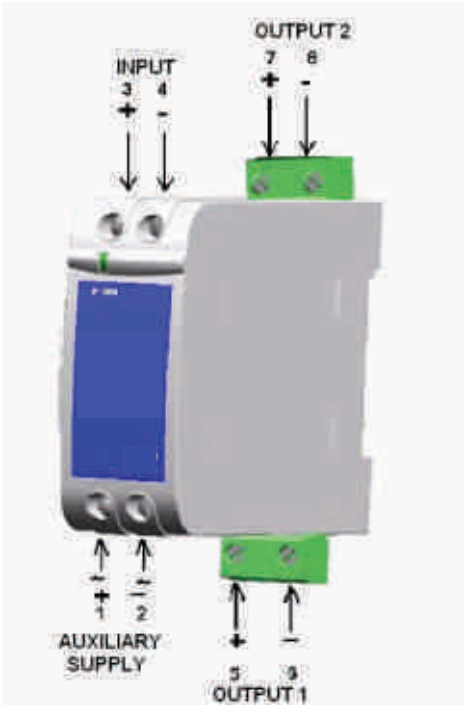
Regulations	
Electromagnetic Compatibility	Acc. to IEC 61326 - 1
Protection	For Housing : IP40 Terminals : IP20
Electrical standards	Acc. to IEC 61010 -1 / EN 61 010 -1
Supply voltage	60 TO 300V DC/AC
Contamination level Over voltage category	III for power supply. II for measuring input and measuring output.
Test Voltage	Power supply versus : -All 3 kV, 50 Hz 1 min Measuring inputs versus : -Measuring outputs 2.3 kV, 50 Hz 1min & O/P1 to O/P 2: 500 V ,50 Hz ,1 min

Dimensions



Note : All Dimensions are in mm

Electrical Connections



Connection	Terminal details	
Measuring input	+ -	3 4
Measuring output 1	+ -	5 6
Measuring output 2	+ -	7 8
Auxiliary Supply	~ , + ~ , -	1 2

Ordering Information

Product Code	TT50-	XX	XX	XX	X	00000000
Input Range	0…10 V	5H				
	2…10 V	3C				
	1…5 V	3B				
	0…20 mA	32				
	1…5 mA	53				
	4…20 mA	55				
	0...75 mV	3D				
Output Range 1	0-20 mA		32			
	4-20 mA		55			
	0-10V		5H			
	2-10V		3C			
Output Range 2	0-20 mA			32		
	4-20 mA			55		
	0-10V			5H		
	2-10V			3C		
Power Supply	60-300U				H	
	24-60U				F	