



## Technical Data Sheet

# *Theta 50*



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 fulfills 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

<b>Electric Isolation</b>	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.	<b>Features</b>	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.
<b>Function</b>	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.		

## Technical Specifications

<b>Reference conditions</b>		<b>Measuring output 1 and output 2</b>	
Ambient temperature	23°C + 2°C	DC current standard ranges	1) 0...20mA 2) 4...20mA
Output burden	Current: 0.5 * Rext max. Voltage: 2 * Rext min.	Burden voltage	12V
<b>Accuracy data (Acc to IEC 60770)</b>		External Resistance	Rext max. [kΩ] = 12V / IAN [mA] IAN = Output circuit full scale value
Basic Accuracy	Limit error < ± 0.2 % including linearity and reproducibility errors.	DC voltage standard ranges	1) 0...10V 2) 2...10V
<b>Ambient Temperature</b>		Burden	Rext min. [kΩ] = UAN [V] / 5 mA UAN = Output circuit full scale value
Climatic rating	Climate case 3Z acc. to VDI / VDE 3540	Current limiter at Rext = 0	Approx. 40mA for voltage output
Operating Temperature	-10 °C to 55 °C	Voltage limiter at Rext = ∞	Approx. 18V for current output
Storage temperature	-40 °C to 70 °C	Residual ripple in Output current	< 0.5% p.p.
Annual mean relative humidity	< 75% standard Climatic rating.	Response time	< 50 ms
<b>Installation Data</b>		<b>Power supply</b>	
Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. to UL 94 self extinguishing, non dripping, free of halogen.	Rated operating voltage	60 to 300 V DC/ AC
Mounting position	Rail mounting / wall mounting	Rated operating frequency	40 to 400 Hz
Weight	Approx. 0.2kg	Power input	≤ 2 W resp. < 4 VA
<b>Influence factors</b>		<b>Measuring inputs</b>	
Temperature	± 0.15% per 10 °C	DC current standard ranges	1) 0...20mA 2) 4...20mA 3) 1...5mA
Burden influence	< ± 0.1 % for current output < ± 0.1 % for voltage output	DC voltage standard ranges	1) 0...10V 2) 2...10V 3) 1...5V
Switch-on drift	< ± 0.2%		
Longtime drift	< ± 0.3% / 12 months		

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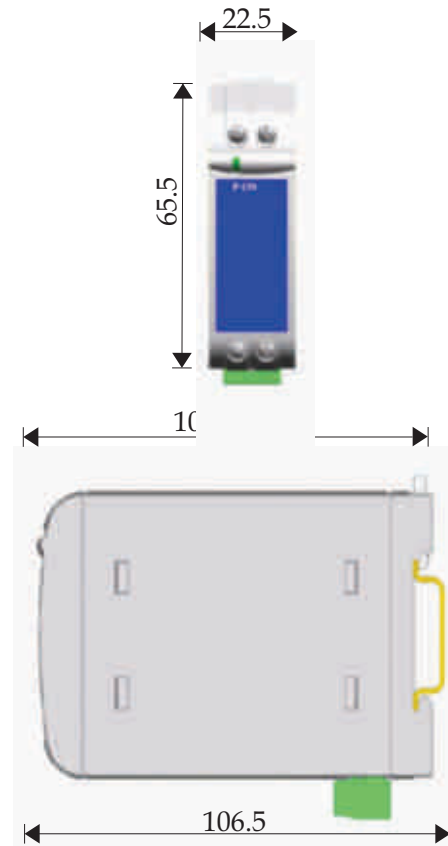
### Connection Terminal

Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	4.0mm <sup>2</sup> single wire or 2 x 2.5mm <sup>2</sup> Fine 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

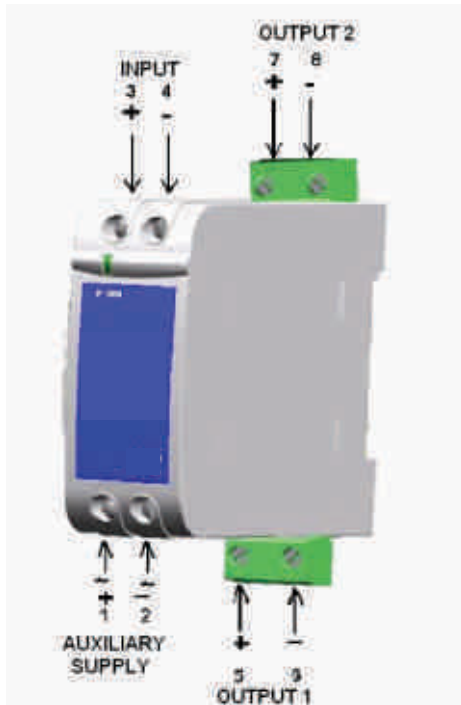
Electromagnetic Compatibility	Acc. to IEC 61326 - 1
Protection	For Housing : IP40 Terminals : IP20
Electrical standards	Acc. to IEC 61010 -1 / EN 61 010 -1
Supply voltage	60 TO 300V DC/AC
Contamination level Over voltage category	III for power supply. II for measuring input and measuring output.
Test 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	



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