



# Model Theta 10A/10V

## Transducer



Theta 10A / 10V transducer converts a sinusoidal AC Current or AC Voltage into a load independent DC Current or a load independent DC Voltage proportional to the measured value.

### Features

Accuracy class 0.2 as per International Standard IEC/EN 60688

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

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### Product Features

Measuring Input	AC Current/ Voltage input signal , sine wave.
Auxiliary Power Supply	1) 40 V-300 V AC/DC. or 2) 24 V-60 V AC/DC.
Analog Output	Isolated analog output, which can be Voltage or Current.

Accuracy	Output signal accuracy class 0.2 as per International Standard IEC/EN 60 688.
LED Indication	LED indication for power ON.
Output Response Time	< 250 ms.

### Technical Specification

Reference conditions for Accuracy	
Ambient temperature	23°C +/- 1°C
Pre-conditioning	30 min acc. to IEC/EN 60 688
Input Variable	Rated Voltage Range / Rated Current Range.
Input waveform	Sinusoidal
Input signal frequency	50...60Hz
Auxiliary supply voltage	Rated Value ±1%
Auxiliary supply frequency	Rated Value ±1%
Output Load	RN = 7.5 V / Y2 ± 1% With DC Current output signal. RN = Y2 / 1 mA ± 1% With DC Voltage output signal.
Miscellaneous	Acc. to IEC/EN 60 686

Auxiliary Supply H/L	
Rated operating voltage (for high Aux. supply H)	40...300 V AC/DC
Rated operating range of frequency (for high Aux. supply H)	45...50...60...65 Hz
Power consumption (for high Aux. supply H)	< 4 VA
Rated operating voltage (for low Aux supply L)	24...60 V AC/DC ±10%
Rated operating range of frequency (for low Aux. supply L)	40...50...60...400Hz
Power consumption (for low Aux. supply L)	< 3 VA

Accuracy Acc. to IEC/EN 60 688	
Reference Value	Output End Value Y2 (Voltage or Current)
Accuracy class	0.2

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.	0.12kg

Additional Error	
Temperature influence	± 0.2% /10°C
Influence of Variants	As per IEC/EN 60 688 standard.

Environmental	
Nominal range of use	0°C to 45°C
Storage temperature	-40°C to 70 °C
Relative humidity of annual mean	≤ 75%
Altitude	up to 2000 m

Safety	
Protection Class	II (Protection Isolated, EN 61 010)
Protection	IP 40, housing according to EN 60 529 IP 20 ,terminal according to EN 60 529
Pollution degree	2
Installation Categor	III
Insulation Voltage	50Hz, 1min. ( EN 61 010-1) 7700VDC, Input versus outer surface 5200VDC, Input versus all other circuits 5200VDC, Auxiliary supply versus Input and Output circuits.



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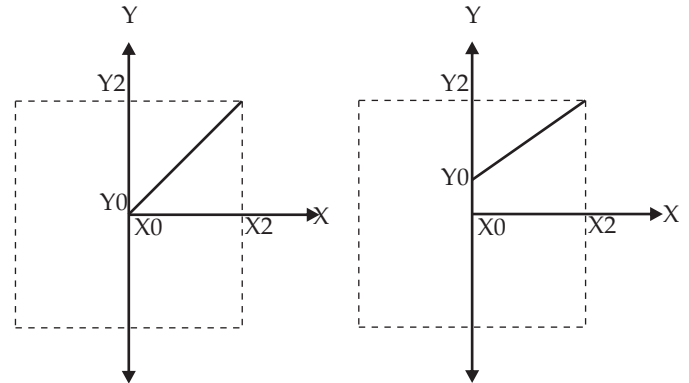
### Technical Specification

Measuring Input X	
Voltage Transducer CON - CV	
Final value of Nominal input Voltage $U_N$ ( X2,AC RMS)	$63.5V \leq U_N \leq 500 V$
Nominal Frequency FN	50 or 60 Hz
Nominal input Voltage burden	$< 0.6 VA$ at $U_N$
Overload Capacity	$1.2 * U_N$ continuously, $2 * U_N$ for 1 second, repeated 10 times at 10 second intervals
Current Transducer CON - CA	
Final value of Nominal input Current $I_N$ (X2,AC RMS)	1 A, 5 A.
Nominal Frequency FN	50 or 60 Hz.
Nominal input Current burden	$< 0.2VA$ at $I_N$
Overload Capacity	$1.2 * I_N$ continuously, $10 * I_N$ for 3 second, repeated 5 times at 5 iminute ntervals, $20 * I_N$ for 1 second, repeated 5 times at 5 iminute ntervals, $50 * I_N$ for 1 second

Measuring Output Y	
Output type	Load independent DC Voltage Current
Load independent DC output (Y)	0...10mA, 0...20mA, 2...10mA, 4...20mA, 0...5V, 0...10V.
Output burden with DC current output Signal	$0 \leq R \leq 15V/Y2$
Output burden with DC voltage output Signal Y	$Y2 / (2 mA) \leq R \leq \infty$
Current limit under overload $R=0$	$\leq 1.6 * Y2$ with current output $\leq 25 mA$ with voltage output
Voltage limit under $R=\infty$	$< 1.6 * Y2$ with voltage output $\leq 25 V$ with current output
Residual Ripple in Output signal	$\leq 1\%$ pk-pk
Response Time	$< 250$ msec

Connection Terminal	
Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	$\leq 4.0 mm^2$ single wire or $2 \times 2.5 mm^2$ fine wire

### Output characteristics



$X_0$  = Start value of input  
 $X_2$  = End value of input= $U_N/I_N$   
 $U_N$  = Nominal input voltage  
 $Y_0$  = Start value of output  
 $Y_2$  = End value of output  
 $I_N$  = Nominal input current

Ambient tests	
IEC 60 068-2-6	Vibration
Acceleration	$\pm 2 g$
Frequency range	10....150...10Hz,
Rate of frequency sweep	1 octave/minute
Number of cycles	10, in each of the three axes
IEC 60 068-2-27	Shock
Acceleration	3 x 50g 3 shocks in each in 6 directions
EN 60 068-2-1/-2/-3 IEC 61 000-4-2/-3/-4/-5/-6	Cold, Dry heat, Damp heat
EN 55 011	Electromagnetic compatibility.

### Symbols and their meanings

X	Input AC Voltage / AC Current
Y	Output DC Voltage / DC Current
H/L	Power supply
FN	Nominal Frequency
RN	Rated value of output burden
UN	Nominal input voltage
IN	Nominal input current

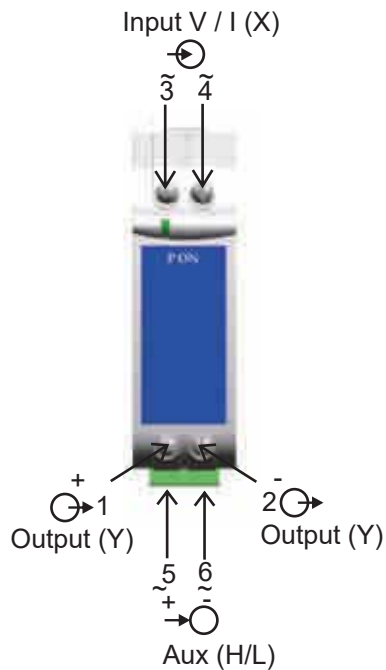


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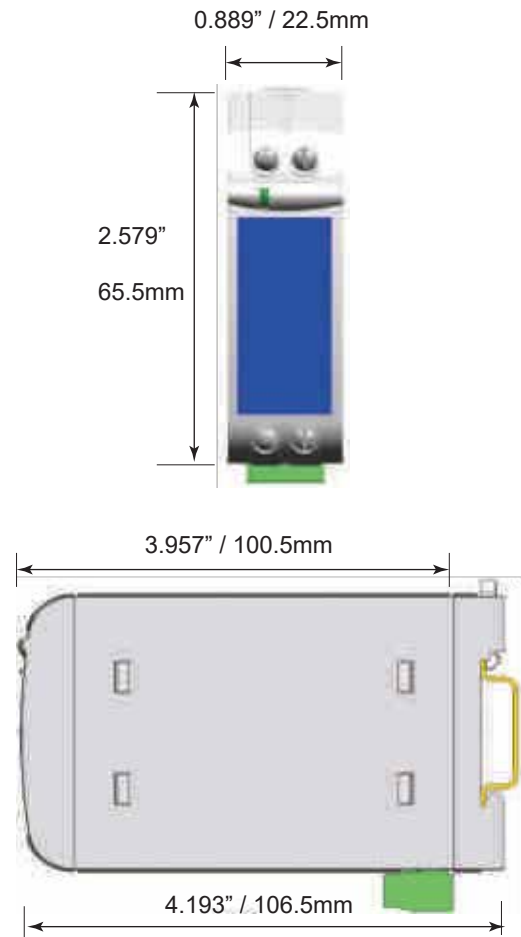
## Transducer

### Electrical Connections

Connection	Terminal details
Measuring input	~ 3
	~ 4
Auxilliary Power supply	~,+ 5
	~, - 6
Measuring output	+ 1
	- 2



### Dimensions





### Ordering Information

Product Code	TT10-	X	XX	X	XX	0000000
Product Type	THETA 10A	A				
	THETA 10V	V				
Input Range	1A		62			
	5A		69			
	63.5V		6D			
	0-100V		6J			
	0-110V		6K			
	122.5V		6P			
	0-150V		6W			
	0-220V		6Z			
	0-230V		7A			
	0-240V		7B			
	0-250V		7D			
	0-300V		7G			
	0-330V		7M			
	415V		7R			
	0-440V		7S			
	450V		7T			
	0-500V		7V			
Power Supply	40-300U			G		
	24-60U			F		
O/P Range	0-10mA				30	
	0-20mA				32	
	4-20mA				55	
	2-10mA				54	
	0-5V				5F	
	0-10V				5H	