



# Theta 10A / 10V

Transducers



*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.

## Special 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.



# Theta 10A / 10V

## Transducers

### Application

**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.

### Product Features

<b>Measuring Input</b>	AC Current/ Voltage input signal , sine wave.	<b>Accuracy</b>	Output signal accuracy <b>class 0.2</b> as per International Standard <b>IEC/EN 60 688</b> .
<b>Auxiliary Power Supply</b>	1) 40 V-300 V AC/DC. or 2) 24 V-60 V AC/DC.	<b>LED Indication</b>	LED indication for power ON.
<b>Analog Output</b>	Isolated analog output, which can be Voltage or Current.	<b>Output Response Time</b>	< 250 ms.

### Technical Specifications

Reference conditions for Accuracy		Auxiliary Supply H/L	
Ambient temperature	23°C +/- 1°C	Rated operating voltage (for high Aux. supply H)	40...300 V AC/DC
Pre-conditioning	30 min acc. to IEC/EN 60 688	Rated operating range of frequency (for high Aux. supply H)	45...50...60...65 Hz
Input Variable	Rated Voltage Range / Rated Current Range.	Power consumption (for high Aux. supply H)	< 4 VA
Input waveform	Sinusoidal	Rated operating voltage (for low Aux supply L)	24...60 V AC/DC ±10%
Input signal frequency	50...60Hz	Rated operating range of frequency (for low Aux. supply L)	40...50...60...400Hz
Auxiliary supply voltage	Rated Value ±1%	Power consumption (for low Aux. supply L)	< 3 VA
Auxiliary supply frequency	Rated Value ±1%	<b>Installation Data</b>	
Output Load	RN = 7.5 V / Y2 ± 1% With DC Current output signal. RN = Y2 / 1 mA ± 1% With DC Voltage output signal.	Mechanical Housing	Lexan 940 (polycarbonate) Flammability Class V-0 acc. To UL 94, self extinguishing, non dripping, free of halogen.
Miscellaneous	Acc. to IEC/EN 60 688	Mounting position	Rail mounting / wall mounting.
<b>Accuracy</b> Acc. to IEC/EN 60 688		Weight	Approx. 0.12kg
Reference Value	Output End Value Y2 (Voltage or Current)	<b>Additional Error</b>	
Accuracy class	0.2	Temperature influence	± 0.2% /10°C
<b>Safety</b>		Influence of Variations	As per IEC/EN 60 688 standard.
Protection Class	II (Protection Isolated, EN 61 010)	<b>Environmental</b>	
Protection	IP 40, housing according to EN 60 529 IP 20 ,terminal according to EN 60 529	Nominal range of use	0°C to 45°C
Pollution degree	2	Storage temperature	-40 °C to 70 °C
Installation Category	III	Relative humidity of annual mean	≤ 75%
Insulation Voltage	50Hz,1min. ( EN 61 010-1) 7700DC, Input versus outer surface. 5200DC, Input versus all other circuits. 5200DC, Auxiliary supply versus input and output circuits.	Altitude	up to 2000 m



### Technical Specifications

#### Measuring Input X

##### Voltage Transducer CON - CV

Final value of Nominal input Voltage $U_N$ (X2, AC RMS)	$63.5V \leq U_N \leq 500V$
Nominal Frequency FN	50 or 60 Hz
Nominal input Voltage burden	$< 0.6VA$ 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 minute intervals, $20 * I_N$ for 1 second, repeated 5 times at 5 minute intervals, $50 * I_N$ for 1 second

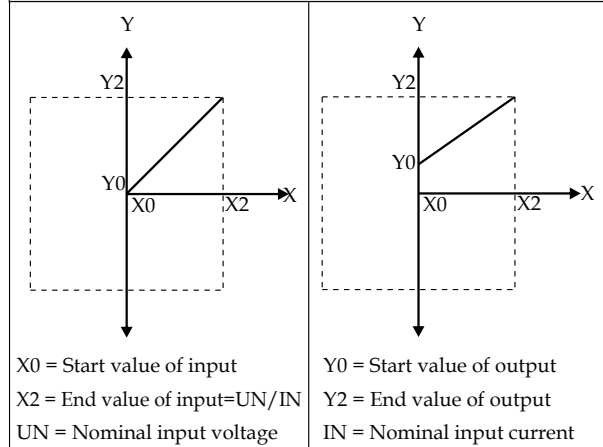
#### Measuring Output Y

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

#### Connection Terminal

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

#### Output characteristics



#### Ambient tests

IEC 60 068-2-6	Vibration
Acceleration	$\pm 2g$
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	$3 \times 50g$ 3 shocks in each in 6 directions
EN 60 068-2-1/-2/-3	Cold, Dry heat, Damp heat
IEC 61 000-4-2/-3/-4/-5/-6 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

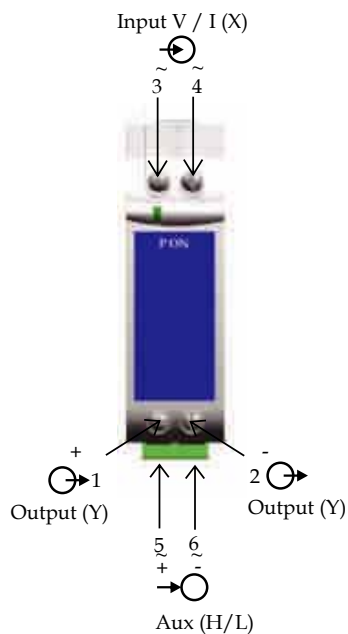


# Theta 10A / 10V

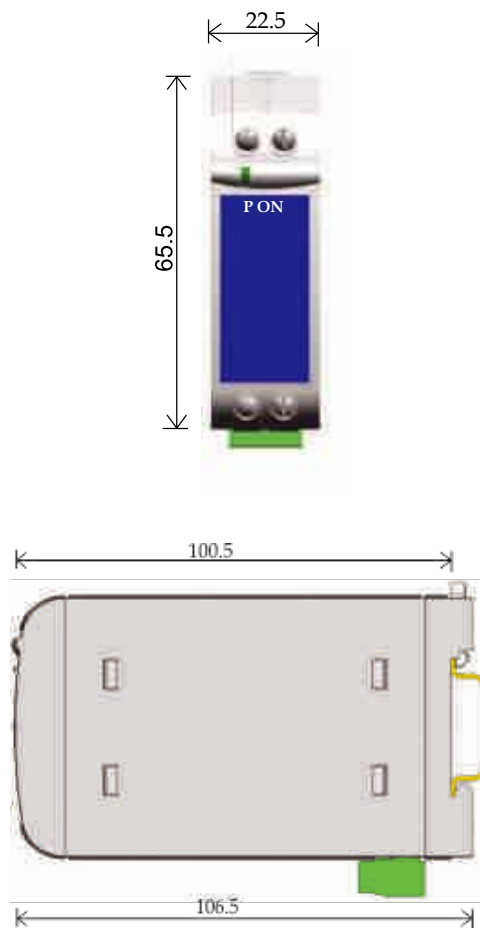
## Transducers

### Electrical Connections

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



### Dimensions



Note : All Dimensions are in mm.



# Theta 10A / 10V

## Transducers

### Ordering Information

Product Code	TT10-	X	XX	X	XX	000000
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	