



Technical Data Sheet

Theta 10A / 10V



File No. E471457



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

- **TRMS** Transducer
- 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

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

Measuring Input	AC Current/ Voltage input signal , sine wave.	Accuracy	Output signal accuracy class 0.2 as per International Standard IEC/EN 60 688 .
Auxiliary Power Supply	1) 40 V-300 V AC/DC. or 2) 24 V-60 V AC/DC.	LED Indication	LED indication for power ON.
Analog Output	Isolated analog output, which can be Voltage or Current.	Output Response Time	< 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%	Installation Data	
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.
Accuracy Acc. to IEC/EN 60 688		Weight	Approx. 0.12kg
Reference Value	Output End Value Y2 (Voltage or Current)	Additional Error	
Accuracy class	0.2	Temperature influence	± 0.2% /10°C
Safety		Influence of Variations	As per IEC/EN 60 688 standard.
Protection Class	II (Protection Isolated, EN 61 010)	Environmental	
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)	$63.5V \leq U_N \leq 500 V$
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 minute intervals, $20 * I_N$ for 1 second, repeated 5 times at 5 minute intervals, $50 * I_N$ for 1 second

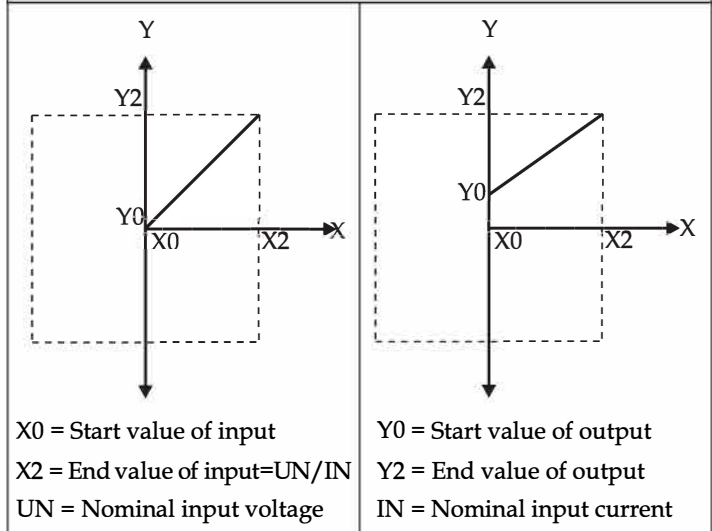
Measuring Output Y

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

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



Ambient tests

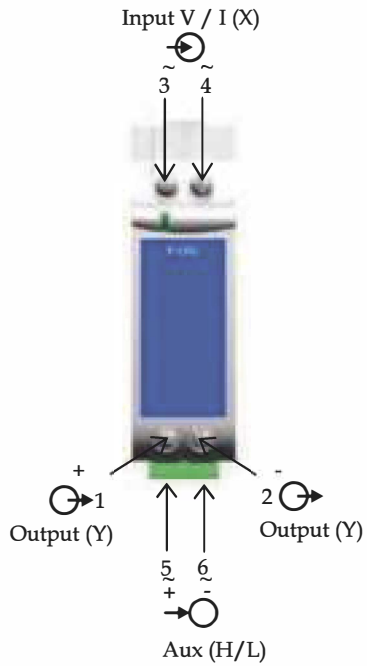
IEC 60 068-2-6	Vibration
Acceleration	$\pm 2 g$
Frequency range	10...150...10Hz,
Rate of frequency sweep	1 octave/minute
Number of cycles	10, in each of the three axes
IEC 60 068-2-27	Shock
Acceleration	$3 \times 50g$ 3 shocks in each in 6 directions
EN 60 068-2-1/-2/-3	Cold, Dry heat, Damp heat
IEC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

Symbols and their meanings

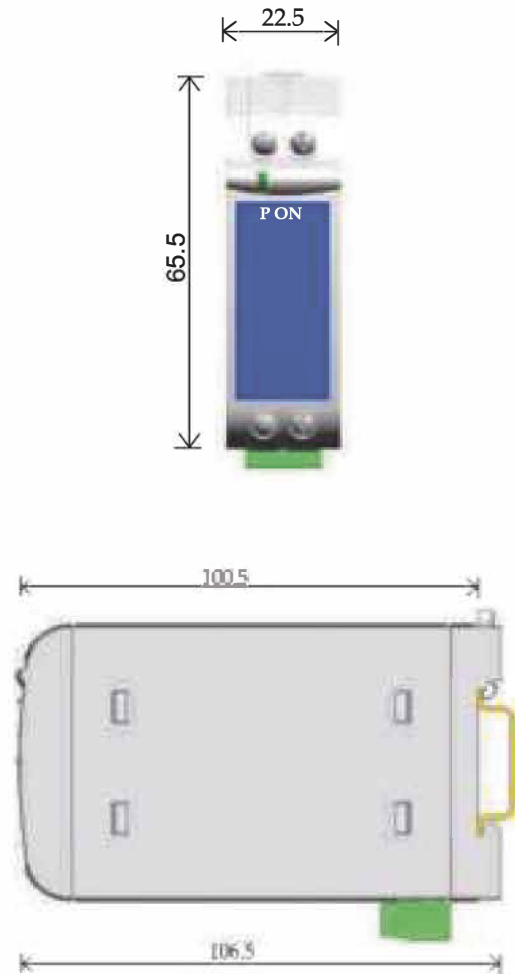
X	Input AC Voltage / AC Current
Y	Output DC Voltage / DC Current
H/L	Power supply
FN	Nominal Frequency
RN	Rated value of output burden
UN	Nominal input voltage
IN	Nominal input current

Electrical Connections

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



Dimensions



Note : All Dimensions are in mm.

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				
0-380V		7P				
Power Supply	40-300U			G		
	24-60U			F		
O/P Range	0-1mA				25	
	0-10mA				30	
	0-20mA				32	
	4-20mA				55	
	2-10mA				54	
	0-5V				5F	
	0-10V				5H	