



Multifunction Meters

Transducers & Isolators

Temperature Controllers

Converters & Recorders

Digital Panel Meters

Current Transformers

Analogue Panel Meters

Shunts

Digital Multimeters

Clamp Meters

Insulation Testers

THETA 10A/10V TRANSDUCERS & ISOLATORS

User Manual - Issue 1.0

SUBJECT TO CHANGE WITHOUT NOTICE

This manual superseded all previous versions – please keep for future reference

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.


1. 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.

2. 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.

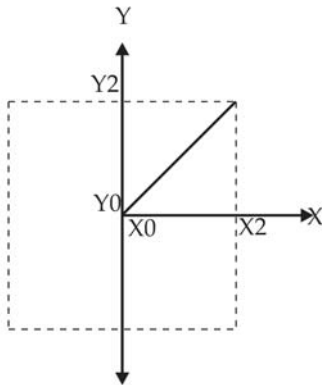
3. Technical Specifications

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

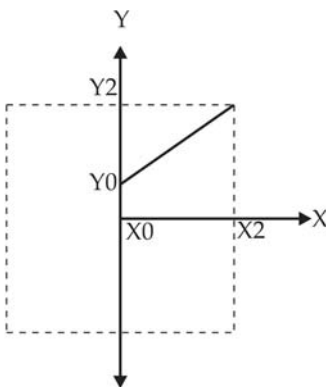
Technical Specifications Continued

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 Category	III
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.
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)	40...50...60...400Hz
Power consumption (for high Aux. supply H)	< 4 VA
Rated operating voltage (for low Aux supply L)	24...60 V AC/DC \pm 10%
Rated operating range of frequency (for low Aux. supply L)	40...50...60...400Hz
Power consumption (for low Aux. supply L)	< 3 VA
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	
	\pm 0.2% /10°C
	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	\leq 75%
Altitude	up to 2000 m
Measuring Input X	
Voltage Transducer CON - CV	
Final value of Nominal input Voltage UN (X2,AC RMS)	$63.5V \leq UN \leq 500 V$
Nominal Frequency FN	50 or 60Hz
Nominal input Voltage burden	< 0.6 VA at UN
Overload Capacity	1.2 * UN continuously, 2* UN for 1 second, repeated 10 times at 10 second intervals
Current Transducer CON - CA	
Final value of Nominal input Current IN (X2,AC RMS)	1 A, 5 A.
Nominal Frequency FN	50 or 60Hz
Nominal input Current burden	< 0.2VA at IN
Overload Capacity	1.2 * INcontinuously, 10* IN for 3 second, repeated 5 times at 5 minute intervals, 20* IN for 1 second, repeated 5 times at 5 minute intervals, 50* IN for 1 second

4. Output Characteristics



X0 = Start value of input
X2 = End value of input=UN/IN
UN = Nominal input voltage



Y0 = Start value of output
Y2 = End value of output
IN = Nominal input current

Technical Specifications Continued

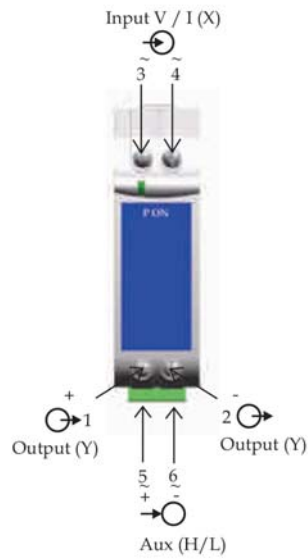
Measuring Output Y	
Output type	Load independent DC Voltage Current
Load independent DC output (Y2)	Calibration to RMS with sine waveform (Average Value) 0...10mA, 0...20mA, 2...10mA, 4...20mA, 0...5V, 0...10V.
Output burden with DC current output Signal	$0 \leq R \leq 15 \text{ V/Y2}$
Output burden with DC voltage output Signal	$Y2/(2 \text{ mA}) \leq R \leq \infty$
Current limit under overload R=0	$\leq 1.6 \cdot Y2$ with Current output. $\leq 25 \text{ mA}$ with Voltage output.
Voltage limit under R= ∞	$\leq 1.6 \cdot Y2$ with Voltage output. $\leq 25 \text{ V}$ with Current output.
Residual Ripple in Output signal	$\leq 1\% \text{ pk-pk}$.
Response Time	< 250 ms.
Connection Terminal	
Connection Element	Conventional Screw type terminal with indirect wire pressure
Permissible cross section of the connection lead	$\leq 4.0 \text{ mm}^2$ single wire or $2 \times 2.5 \text{ mm}^2$ fine wire
Ambient tests	
IEC 60 068-2-6	Vibration
Acceleration	$\pm 2 \text{ g}$
Frequency range	10...150...10Hz,
Rate of frequency sweep	
Number of cycles	10, in each of the three axes
IC 60 068-2-27	Shock
Acceleration	$3 \times 50\text{g}$ 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

5. Symbols and their meanings

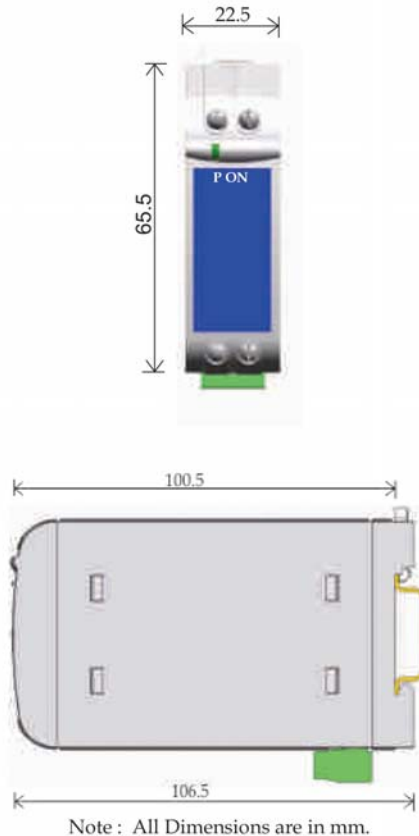
X	Input AC Voltage / AC Current
Y	Output DC Voltage / DC Current
H/L	Power supply
FN	Nominal Frequency
RN	Rated value of output burden
UN	Nominal input voltage
IN	Nominal input current

6. Electrical Connections

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



7. Dimensions



8. 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			
	330V		7M			
	415V		7R			
	0-440V		7S			
	450V		7T			
0-500V		7V				
Power Supply	40-300U			G		
	24-60U			F		
1 O/P Range	0-10mA				30	
	0-20mA				32	
	4-20mA				55	
	2-10mA				54	
	0-5V				5F	
	0-10V				5H	

Contact



Sifam Tinsley Instrumentation Ltd

1 Warner Drive
Springwood Industrial Estate
Braintree, Essex
CM7 2YW

Tel: 01376 335271
E-mail: sales@sifamtinsley.com

www.sifamtinsley.co.uk