Sifam Tinsley Programmable Multi-Transducers

Theta 40

- Monitor single and 3-phase power systems
- Input voltage up to 693 V (phase-to-phase)
- Up to 4 analog outputs
- Up to 4 digital outputs (meter transmit, limit)
- High accuracy: 0.2% V/I, 0.25% P
- Wide range auxiliary power AC/DC
- RS-232 setup port
- RS-485 Modbus communication (optional)
- Windows software with password protection for programming, data acquisition, analysis and simulation

Theta 40

Simultaneously measure several variables of an electric power system and process them to produce 2, 3 or 4 analog output signals. Two or four digital outputs are available for signaling limits or power metering. For two of the limit outputs, up to 3 measurands can be logically combined.

ORDERING INFORMATION

TT40-1J00000000000	Theta 40 with 4 analog out, 2 digital out
TT40-2J00000000000	Theta 40 with 2 analog out, 4 digital out
TT40-3J00000000000	Theta 40 with 2 analog out
TT40-4J00000000000	Theta 40 with 4 analog out, RS-485
TT40-5J00000000000	Theta 40 with 3 analog out
TT40-6J00000000000	Theta 40 with RS-485

Change J to F for 24-60V AC/DC aux. power

SPECIFICATIONS

System:	Single phase; 3 phase, 3 wire balanced; 3 phase, 3 wire unbalanced, 3 phase 4 wire balanced, 3 phase 4 wire unbalanced, open Y
Measured Values:	System: active, reactive, apparent power, frequency Phase: active, reactive, apparent power, AC voltage rms, AC current rms, current average, cos, sin, power factor (active & reactive)
Input:	400V, 5A nominal, 50/60Hz
Input Burden:	Current: 0.3VA; Voltage: $Vin^2/400kW$
Accuracy Class:	Power: 0.25, Voltage: 0.2, Current: 0.2, Frequency: 0.15
Max. Current In:	10A continuous, 100A for 3s, 250A for 1s
Max. Voltage In:	1-phase: 480V continuous, 600V for 10s 3-phase: 831V continuous, 1040V for 10s
Measure Cycle:	0.25 to 0.5s at 50Hz
Response Time:	1-2 measure cycles
Analog Outputs:	±20mA or 4-20mA, 750Ω max load
Digital Outputs:	Open collector, pulse width >100ms; 8-40V, 27mA max.
Isolation Test (AC):	3250V input to input, 5550V input to output/power, 490V output to output
Auxiliary Power:	Standard: 85-230V AC (±10%, 50/60Hz) or DC (-15+33%) Optional: 24-60V AC (±10%, 50/60Hz) or DC (-15+33%)
Mounting:	Panel, wall or top-hat rail
Connections:	Screw terminals with wire guards
Environment:	0 to 45°C operating, <75% RH, non-condensing
Protection:	IP40 housing, IP20 terminals
Dimensions:	87.5 x 181 x 124 mm (WxHxD)

Theta M

- Power & Energy measurement
- Onsite programmable PT & CT ratio
- THD measurement
- Selectable analog output range (0-20mA / 4-20mA / ±20mA)
- Detection and signaling of incorrect phase sequence
- RS-485 & USB communications, free configuration software
- LED indicators for Power On, Alarm Status, Tx/Rx
- Galvanic isolation, input to output

Theta M

Measure parameters of a 3-phase, 3W/4W AC power system, balanced or unbalanced. Convert the measured values into standard analog current signals. Relay outputs flag the overflow of the selected quantities. The pulse output can be used for consumption monitoring of active energy.

Parameter	Measurement range	Line	Basic error
Current	0.02-6 A	L1,L2,L3	±0.2%
Voltage L-N	2.9-69.2/11.5-276 V	L1,L2,L3	±0.2%
Voltage L-L	5.0-120/20-480 V	L1,L2,L3	±0.5%
Frequency	47.0 to 63.0 Hz	L1,L2,L3	±0.2%
Active power	-1.65 to 1.65 kW	L1,L2,L3,Σ	±0.5%
Reactive power	-1.65 to 1.65 kvar	L1,L2,L3,Σ	±0.5%
Apparent power	1.4 VA to 1.65 kVA	L1,L2,L3,Σ	±0.5%
PF factor	-1 to 1	L1,L2,L3,Σ	±0.5%
Tangens φ	-1.2 to 1.2	L1,L2,L3,Σ	±1%
Cosines φ	-1 to 1	L1,L2,L3,Σ	±1%
Angle U to I	-180 to 180 deg	L1,L2,L3	±0.5%
Input active energy	0-99999999.9 kWh	Σ	±0.5%
Devel. active energy	0-99999999.9 kvarh	Σ	±0.5%
Reactive ind. energy	0-99999999.9 kWh	Σ	±0.5%
Reactive cap. energy	0-99999999.9 kvarh	Σ	±0.5%
THD (10-120% V,I)	0 to 100%	L1,L2,L3,Σ	±5%

ORDERING INFORMATION

To Order—Insert Code for Each Letter to Select Catalog Number.

Theta-M [A] [B] [C] [D] [E] Example: Theta-M22122

A	Current Input:	
	1	1A
	2	5A
B	Voltage Input	
	1	57.7V L-N, 100V L-L
	2	230V L-N, 400V L-L
C	Supply Voltage	
	1	85-253VAC / 90-320VDC
	2	20-40VAC / 20-60VDC
D	Outputs	
	1	4 relays (no analog outputs)
	2	2 relays, 2 analog outputs
	3	4 analog outputs (no relays)
E	Load Resistance	
	1	250 ohm
	2	750 ohm

SPECIFICATIONS

Measurement:	TRMS, max crest factor 2
CT Ratio:	1 to 10000
PT Ratio:	0.1 to 4000.0
Input Burden:	Current: <0.1VA; Voltage: <0.05VA
Input Overload:	10x Irated for 5s; 2x Vrated for 5s, 1000V max.
Communications:	2-wire RS-485 (4.8-38.4kb); USB 2.0
Protocol:	Modbus RTU
Analog Outputs:	±20mA, 0-20mA or 4-20mA; accuracy 0.2%, τ=3s
Relay Outputs:	Voltage less NO contacts, 250VAC/0.5A
Pulse Output:	Open collector, passive per EN62053-31
Isolation Test (AC):	3110V input/output/supply (no ch-ch analog out isolation)
Auxiliary Power:	Standard: 85-253VAC (40-400Hz) / 90-320VDC , <10VA Optional: 24-40VAC (40-400Hz) / 20-60VDC
Mounting:	Panel, wall or DIN rail
Connections:	Screw terminals with wire guards
Environment:	-10 to 55°C operating, <95% RH, non-condensing
Protection:	IP40 housing, IP20 terminals
Dimensions:	122.5 x 66.5 x 106.5 mm (WxHxD)