CROMPTON INSTRUMENTS 254-TXX

PALADIN ADVANTAGE UNIVERSAL PROGRAMMABLE TRANSDUCER

RELEVANT STANDARDS AND TEST REPORTS

- IEC 61326
- IEC 61010-1
- IEC62053-21
- EN60688
- RoHS Compliant
- UL Certified

c UL us
E203000

KEY FEATURES

- DIN-rail enclosure
- Measurement, isolation & conversion of up to 31 electrical parameters
- RS485 Modbus RTU protocol as standard
- Ethernet or USB options
- Versatile programmable relay output
- Programmable VT/CT ratio
- True rms measurement
- User programmable configuration
- Linear or Dual Slope Outputs
- User friendly programming interface

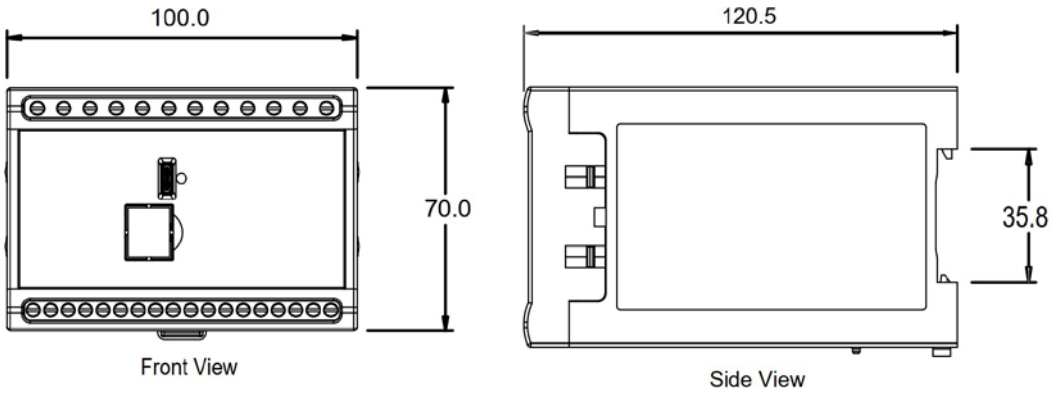
TE Connectivity's (TE) Crompton Instruments Paladin Advantage, 254-TXX is a programmable transducer which provides measurement, isolation and conversion of all main electrical parameters into an industry standard DC output signal. The 254-TXX can be used in single and three-phase balanced or unbalanced three or four-wire electrical systems.

The 254-TXX has an accuracy of CL0.2 and includes RS485 Modbus RTU communications protocol and pulse/alarm output as standard. The 254-TXX is an accurate device for the conversion of all main electrical parameters into 2 or 4 fully isolated Voltage or mA outputs.

Designed, developed and manufactured in the UK, with an integrated microprocessor for exceptional handling of distorted waveforms. The 254-TXX is ideal for low, medium and high voltage applications and provides a high protection against continuous and short circuit protection as well as galvanically isolated inputs and outputs

Crompton Technology Inc,7538 Bath Rd, Mississauga, ON, L4T 1L2, T:905-671-2304, F:905-671-3661, info@cromptoncanada.com, www.cromptoncanada.com

DIMENSIONAL INFORMATION



Product selection		
Product Code	**Outputs**	**Auxiliary**
254-TXX-M-2-030	**2x Analogue, USB**	**100-250V AC/DC**
254-TXX-M-2-070	**2x Analogue, Ethernet**	
254-TXX-M-4-030	**4x Analogue, USB**	
254-TXX-M-4-070	**4x Analogue, Ethernet**	
254-TXX-L-2-030	**2x Analogue, USB**	**12-48V DC**
254-TXX-L-2-070	**2x Analogue, Ethernet**	
254-TXX-L-4-030	**4x Analogue, USB**	
254-TXX-L-4-070	**4x Analogue, Ethernet**	

The Paladin 254-TXX is a programmable Transducer.
For initial programming or reprogramming of an existing product please use the Crompton Instruments Transducer Configurator software.

Make sure that you have the latest version of Transducer Configurator software installed on your
computer. You can download the latest version at:

https://www.te.com/en/private/energy/crompton-software-downloads-254-TXX-programmable-transducer.html

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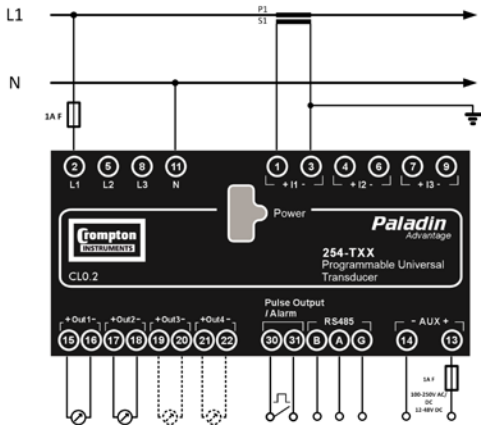
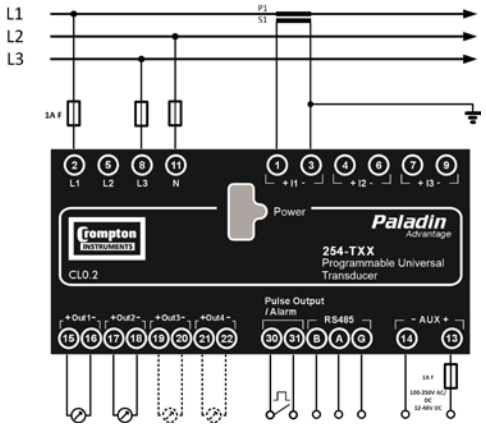
WIRING DIAGRAMS

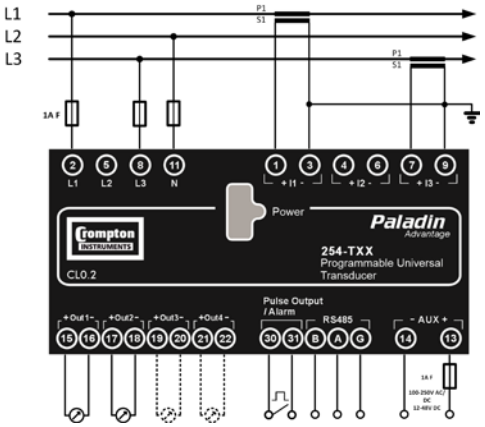
SINGLE PHASE



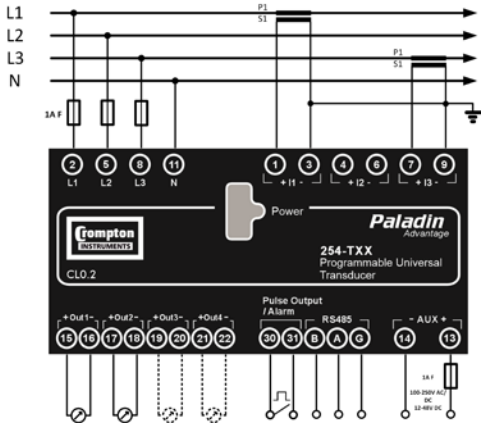
THREE PHASE THREE WIRE BALANCED LOAD



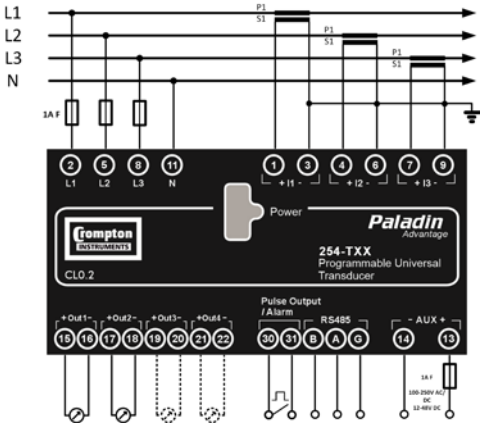
THREE PHASE THREE WIRE UNBALANCED LOAD



THREE PHASE FOUR WIRE BALANCED LOAD



THREE PHASE FOUR WIRE UNBALANCED LOAD



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Technical Specifications	
Input	
Nominal input voltage	57.7 V – 277 V AC L-N (100 – 480 V L-L) 480 V MAX
Max. Continuous input overload voltage	120% of nominal
Max. Short duration input voltage (300 msec)	2 x nominal voltage
Nominal input voltage burden	< 0.1 VA per phase
Nominal input current	1A AC or 5A AC rms
Nominal input current burden	< 0.1 VA per phase
Max. Continuous input overload current	2 x nominal current
Max. Short duration input current (300 msec)	20 x nominal current
Auxiliary	
Operating range	100 – 250 V AC/DC (+/- 20%) 45 – 65 Hz or 12 – 48 V DC (+/- 20%)
Supply burden	<15VA / <5VA
Accuracy	
Voltage (V)	< 0.2%
Current (A)	< 0.2%
Neutral current calculated (A)	< 1.0%
Frequency (Hz)	< 0.1 Hz
Power factor (PF)	1% of unity
Active power (W)	+/- 0.2% of range
Reactive power (VAr)	+/- 0.2% of range
Apparent power (VA)	+/- 0.2% of range
Active energy (kWh)	Class 0.2 (IEC 62053-21)
Reactive energy (kVArh)	+/- 0.2% of range
Response time	<200 msec
Range	
Voltage (V)	5% to 120% for nominal
Current (A)	5% to 120% of nominal
Frequency	45 – 65 Hz
THD	2% up to 63rd harmonic
Outputs	
Analogue output	0... +/- 1 mA 0... +/- 5 mA 0... +/- 10 mA 0... +/- 20 mA 4... +/- 20 mA 0... +/- 1 V 2... +/- 10 V All programmable
Pulse/alarm output relay	User defined solid state relay
Contact rating	100 mA @ 50 V
Pulse duration	20 msec to 300 msec
Alarm delay	0 – 120 secs
Alarm hysteresis	1 – 99%
Alarm type	User Defined Solid State Relay
Communication protocol	RS485 Modbus RTU (USB / Ethernet Options)
Type	2-wire half duplex
Baud rate	2400, 4800, 9600, 19200, 38400
Enclosure	
Enclosure style	DIN-rail mounting
Dimensions	120(H) x 100(W) x 70(D) mm
Material	Polycarbonate to UL94-V0
Weight	0.50 kg
Terminals	Shrouded screw-clamp 0.05 – 4 mm wire
Environment	
Operating temperature	-10°C to +55°C
Storage temperature	-30°C to +70°C
Relative humidity	0 – 90% non-condensing
Shock	30 g in 3 planes
Vibration	10 Hz to 50 Hz
Dielectric voltage	Withstand test 4 kV, 50 Hz for 1 minute between auxiliary/input/output

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PARAMETERS

Parameters		
Parameter	**Description**	**Analogue Output**
V1	Phase 1 Voltage	✓
V2	Phase 2 Voltage	✓
V3	Phase 3 Voltage	✓
I1	Phase 1 Current	✓
I2	Phase 2 Current	✓
I3	Phase 3 Current	✓
W1	Phase 1 Watts	✓
W2	Phase 2 Watts	✓
W3	Phase 3 Watts	✓
Var1	Phase 1 Vars	✓
Var2	Phase 2 Vars	✓
Var3	Phase 3 Vars	✓
VA1	Phase 1 VA	✓
VA2	Phase 2 VA	✓
VA2	Phase 3 VA	✓
VLL12	Phase 1-2 Voltage	✓
VLL23	Phase 2-3 Voltage	✓
VLL31	Phase 3-1 Voltage	✓
PF1	Power Factor Phase 1	✓
PF2	Power Factor Phase 2	✓
PF3	Power Factor Phase 3	✓
PA1	Phase Angle Phase 1	✓
PA2	Phase Angle Phase 2	✓
PA3	Phase Angle Phase 3	✓
VLN Avg	Average L/N Voltage	✓
VLL Avg	Average L/L Voltage	✓
I Sum	System Current Total	✓
I Avg	Average System Current	✓
W Sum	System Power Total	✓
VAr Sum	System Reactive Power Total	✓
VA Sum	System VA Total	✓
Sys Hz	System Frequency	✓
PF Avg	System Power Factor	✓
THD V1	Phase 1 V THD %	✓
THD V2	Phase 2 V THD %	✓
THD V3	Phase 3 V THD %	✓
THD I1	Phase 1 I THD %	✓
THD I2	Phase 2 I THD %	✓
THD I3	Phase 3 I THD %	✓

**Availability of individual measurements depends on the selected wiring configuration. Phase specific power quantities are only available where they are directly measurable. In three phase three wire systems, system power values should be used. See communications guide for further details.*

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