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Serving the Automation & Control Industry Since 1984



Quality
Endorsed
Company



Process Control, Monitoring & Protection Devices

Altech Corp.®

Since 1984, Altech Corporation has grown to become a leading supplier of automation and industrial control components. Headquartered in Flemington, NJ, Altech has an experienced staff of engineering, manufacturing and sales personnel to provide the highest quality products with superior service. This is the Altech Commitment!

With experienced Product Engineers and Customer Service personnel, Altech provides solutions to your most pressing application challenges. All with one thought in mind - *to ensure that we solve your problem the first time!*



Quality Commitment

Altech's control components meet diverse national and international standards such as UL, NEC, CSA, IEC, VDE and more. Altech provides superior customer service and delivery through Total Quality Management and Continuous Process Improvement. Altech is ISO 9001 approved. We perform these services with honesty and integrity and are committed to achieve these goals.



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Analog / Digital Protection Relays

Protection

Altech is pleased to offer a variety of protection relays covering:

- Phase Monitoring
- Voltage Monitoring
- Current Monitoring
- Frequency Monitoring
- Current Leakage / Ground Fault Monitoring

Protection relays help to maintain systems and ensure that proper action is taken when a fault is detected. Such functions help to preserve productivity and operational effectiveness of integral components.



Applicable EMI / EMC Standards

Product Standard:

Products	Electromagnetic Compatibility
Phase Sequence	IEC60947-5-1
Voltage Protection	IEC60947-2
Current Protection	IEC60947-1
Earth Leakage Current	IEC60947-2

Category	Standards Compliance	
ESD Immunity	IEC 61000-4-2	Level III
Surge Immunity	IEC 61000-4-5	+/- 2 kV common mode, +/- 1 kV differential mode
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz Level II, 1.4GHz to 2GHz Level I, 2GHz to 2.7GHz
Conducted Susceptibility	IEC 61000-4-6	Level III
Voltage Dips and Interruptions	IEC 61000-4-11	Dips: 0% residual voltage / 1 cycle (Criteria B.), 40% residual voltage / 10 cycles 50 Hz / 12 cycles 60 Hz (Criteria C) 70% residual voltage / 25 cycles 50 Hz / 30 cycles 60 Hz (Criteria C) Interruptions: 0% residual voltage / 250 cycles 50 Hz / 300 cycles 60 Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level III

FEATURES

- 3Ø - 3 Wire Input
- Self Powered
- Monitors Under Voltage, Over Voltage, Phase Sequence and Phase Failure
- Trip time delay (T); 0.2 to 10 sec
- Slim, Space Saving Design
- DIN Rail Mount
- Size: 17.5mm (width)



CAT. NO.

600VPR

Display LED Indication	Relay ON, Power ON
Supply Specification Input Voltage	Self Powered 170-290V AC
Input Specification Input Measurement	Under Voltage/ Over Voltage / Phase Failure / Phase Sequence
Trip Setting	Under Voltage: 170-224V AC / Over Voltage: 236-290V AC
Trip Delay	0.2 - 10 sec
Output Specification Main Output	SPDT - 1 C/O - NO: 5A, NC: 3A@250V AC
Functional Specification Trip Time Settings	Power ON Delay: 0.4 sec / Trip Time Delay: 0.2-10 sec
Reset	Auto reset on removal of fault condition
Power Consumption	20VA max
Accuracy Trip Voltage	+/- 5% of Full Scale
Trip Time	+/-5% of Full Scale
Environmental Specification Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	62 grams (.13lbs)

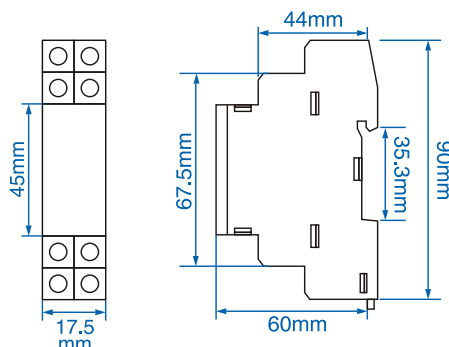
Ordering Information

Part No.	Supply Voltage	CE	RoHS	UL US
600VPR-170/290-CU	170 to 290V AC	●	●	●

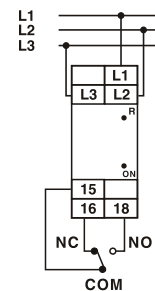
LED Indication Chart

Supply	Relay LED	Power LED
Nominal Condition	ON	ON
Phase Reversed	OFF	ON
UV / OV	OFF	ON

DIMENSIONS



TERMINAL CONNECTIONS



! See pages 42-43 for timing diagrams.

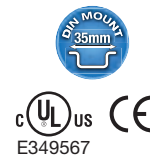
PROTECTION

Analog 3Ø Self Powered Phase Protection Relay LED Indication

PROTECTION

FEATURES

- 3Ø - 3 Wire Input
- Self Powered
- Monitors Phase Sequence, Phase Failure, Phase Imbalance
- Slim, Space Saving Design
- DIN Rail Mount
- Size: 17.5mm (width)



CAT. NO.

600PSR

Display	
LED Indication	Relay ON
Supply Specification	
Input Voltage	Self Powered 165-300V AC
Input Specification	
Input Measurement	Phase failure and Phase Sequence / Phase Imbalance
Trip Setting	Phase Failure Trip: 3 Phase voltage < 154V AC / Phase Imbalance: 30V fixed / Phase Sequence: Yes
Trip Delay	0.2 sec max
Output Specification	
Main Output	SPDT - 1 C/O - NO: 5A / NC: 3A@250V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 0.4 sec / Trip Time Delay: 0.2-10 sec
Hysteresis	6V
Reset	Auto reset on removal of fault condition
Power Consumption	20VA max
Accuracy	
Trip Voltage	+/-3% of Full Scale
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	62 grams (.13lbs)

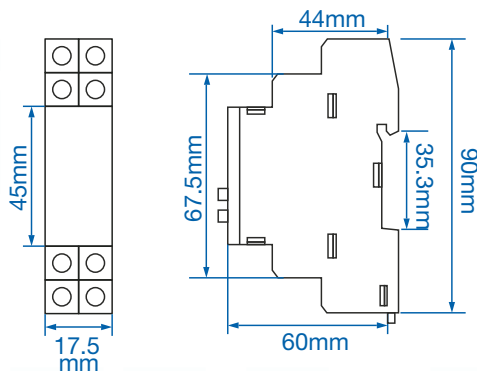
Ordering Information

Part No.	Supply Voltage	CE	RoHS	cULus
600PSR-165/300-CU	165 to 300V AC	●	●	●

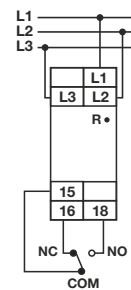
LED Indication Chart

Supply	Relay LED
Nominal Condition	ON
Phase Reversed	OFF
Phase Imbalance	OFF
Phase Failure	OFF

DIMENSIONS



TERMINAL CONNECTIONS



See pages 42-43 for timing diagrams.

FEATURES

- 1Ø - 2 Wire, 3Ø - 3 Wire, 3Ø - 4 Wire Input
- Current leakage / ground fault monitoring, 10mA - 30A
- True RMS measurement
- CBCT connection monitoring
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching hysteresis
- Two separate alarm relays with NO or NC operation selectable
- Test and Reset buttons via front / remote
- LCD with backlight
- DIN Rail Mount
- Size: 35mm (Width)



900ELR-2

CAT. NO.

Display	
Display Type	Liquid Crystal Display with backlight
Digits	1 row of 3 digits
Resolution	Current: 0.1mA / 1mA / 0.01A, 0.1A
LED Indication	LED 1: Alarm, LED 2: Pre-Alarm
Supply Specification	
Input Voltage	110/230 V AC (45-65Hz)
Input specification	
Input Measurement	Current Leakage (Via CBCT)
Trip Setting	Leakage Current: 10mA-30A / Pre-Alarm: 50-100% of Leakage Current Setting
Current Rating	Measuring Range (RMS Value) 10mA - 30A, 45-65Hz
Output Specification	
Main Output	SPDT -2 C/O - NO: 5A, 250 V AC and NC:3A, 250 V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 0.5-99.9 sec / Trip Time Delay: 0-99.9 sec / Recovery Time Delay: 0-99.9 sec / Response Time: <30ms (if trip current 5x set value) / <50ms (if trip current 1x set value)
Alarm Indications	Pre-warning alarm, Trip, CBCT error
Hysteresis	5-40% of set value
Latching	Selectable
Reset	Auto/Manual (Selectable)
Power Consumption	3VA max
Electrical Connection	1Ø-2 wire / 3Ø-3 wire / 3Ø- 4 wire
Accuracy	
Current	+/-5% of setting
Power Delay	+/-5% of setting + 100ms
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	217 grams(.48 lbs)
Protection Level	IP50 (for faceplate), IP30 (for housing), IP20 (for terminals)

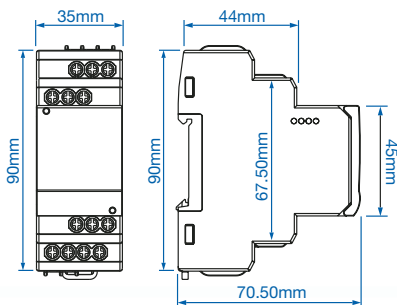
Ordering Information

Part No.	Supply Voltage	CE	RoHS	UL US
900ELR-2-230V-CE	230V AC	●	●	
900ELR-2-110V	110V AC			

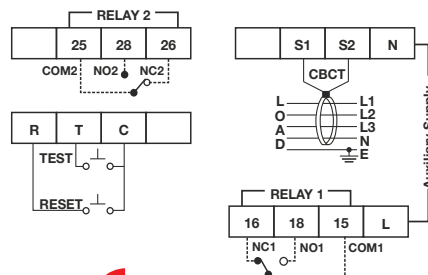
Used with CBCT

See page 14.

DIMENSIONS



TERMINAL CONNECTIONS



See pages 42-43 for timing diagrams.

PROTECTION

Digital 3Ø Self Powered Voltage / Phase / Frequency Protection Relay Liquid Crystal Display

PROTECTION

FEATURES

- 3Ø - 3 Wire, 3Ø - 4 Wire Input
- Self powered
- Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure and Phase sequence
- True RMS measurement
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching Hysteresis
- Two separate alarm relays
- LCD
- Din Rail mount
- Size : 35mm (Width)



CAT. NO.

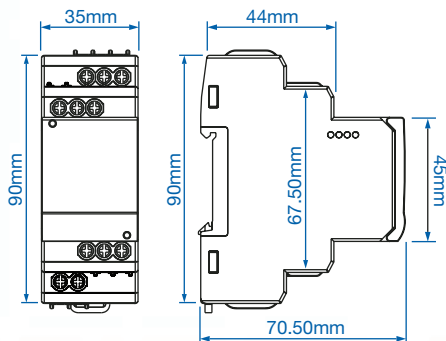
900VPR-2

Display	
Display Type	Liquid Crystal Display
Digits	1 row of 3 digits
LED Indication	LED 1: Power On, LED 2: Relay 1, LED 3: Relay 2
Supply Specification	
Input Voltage	Self Powered 280-520 V AC
Input Specification	
Input Measurement	Under Voltage / Over Voltage / Under Frequency / Over Frequency / Phase Asymmetry / Phase Failure / Phase Sequence
Trip Setting	Under Voltage: 280- 520 V AC [L-L] (3Ø-3 wire) 160-300 V AC [L-N] (3Ø-4 wire), Over Voltage: 280-520 V AC [L-L] (3Ø-3 wire) 160-300 V AC [L-N](3Ø-4 wire), Under Frequency: 45-65Hz / Over Frequency: 45-65Hz / Phase Failure: Yes / Phase Sequence: Yes / Phase Asymmetry: 5-99.9%
Measuring Range	280 - 520V AC [L-L]; 160 - 300V AC [L-N]
Output Specification	
Main Output	SPDT -2 C/O - NO: 5A, 250 V AC and NC:3A, 250 V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 2-99.9 sec / Trip Time Delay: 0-99.9 sec / Recovery Time Delay: 0-99.9 sec / Response Time: <200ms
Alarm Indications	Trip
Hysteresis	Current: 0.1-99.9A
Latching	Selectable
Reset	Auto/Manual (Selectable)
Electrical Connection	3Ø-3 wire, 3Ø- 4 wire
Accuracy	
Voltage	+/-1%
Frequency	+/-0.3 Hz
Time Setting	+/- 5% of setting, +/-200ms
Environmental Specification	
Operating Temperature	0 to 55°C (32 to 131°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	135 grams (.31 lbs)
Protection Level	IP50 (for faceplate), IP30 (for housing), IP20 (for terminals)

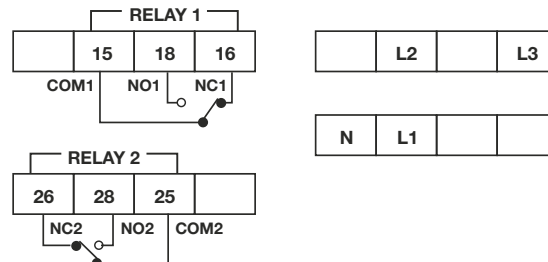
Ordering Information

Part No.	Supply Voltage	CE	RoHS	cULus
900VPR-2-280/520V-CU	280-520V AC	●	●	●

DIMENSIONS



TERMINAL CONNECTIONS



See pages 42-43 for timing diagrams.

FEATURES

- 3Ø - 3 Wire, 3Ø - 4 Wire Input
- Monitors Under voltage, Over voltage, Under frequency, Over frequency, Phase asymmetry, Phase failure, Phase sequence and Neutral Loss
- True RMS measurement
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching hysteresis
- Two alarm relay with NC or NO operation selectable
- LCD with backlight
- DIN Rail Mount
- Size: 35mm (Width)



CAT. NO.

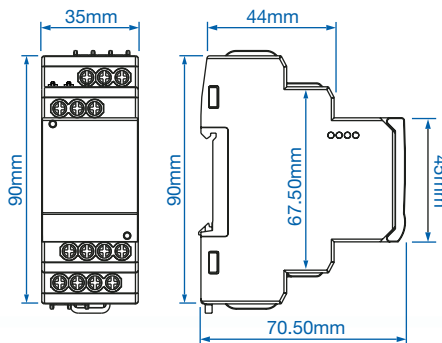
900VPR-BL-U

Display	
Display Type	liquid Crystal Display with backlight
Digits	1 row of 3 digits
LED Indication	LED 1: Relay 1, LED 2: Relay 2
Supply Specification	
Input Voltage	85-270 V AC/DC
Input Specification	
Input Measurement	Under Voltage / Over Voltage / Under Frequency / Over Frequency / Phase Asymmetry / Phase Failure / Neutral Loss and Phase Sequence
Trip Setting	Under Voltage: 85-500 V AC [L-L] (3Ø-3 wire) 50-288 V AC [L-N] (3Ø-4 wire), Over Voltage: 85-500 V AC [L-L] (3Ø-3 wire), 50-288 V AC [L-N](3Ø-4 wire), Under Frequency: 45-65Hz, Over Frequency: 45-65Hz / Phase Failure: Yes / Phase Sequence: Yes / Phase Asymmetry: 5-30% / Neutral Loss: Yes
Output Specification	
Main Output	SPDT -2 C/O - NO: 5A, 250 V AC and NC:3A, 250 V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 0.5-300 sec / Trip Time Delay: 0-300 sec / Recovery Time Delay: 0-300 sec / Response Time: <120ms
Alarm Indications	Trip
Hysteresis	Voltage: 1-40 V / Frequency: 0.1-2 Hz / Asymmetry: 2-20%
Latching	Selectable
Reset	Auto/Manual (Selectable)
Electrical Connection	3Ø-3 wire, 3Ø- 4 wire
Accuracy	
Voltage	1V
Frequency	0.1 Hz
Time Setting	+/- 5% of setting, + 200ms
Environmental Specification	
Operating Temperature	-25 to 55°C (-13 to 131°F)
Storage Temperature	-25 to 70°C (-13 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	150 grams (.33 lbs)
Protection Level	IP50 (for faceplate), IP30 (for housing), IP20 (for terminals)

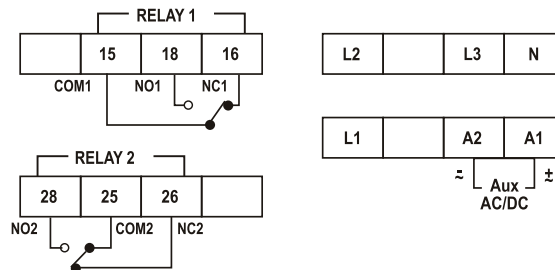
Ordering Information

Part No.	Supply Voltage	CE	RoHS	UL
900VPR-1-BL-U-CE	85-270V AC/DC	●	●	

DIMENSIONS



TERMINAL CONNECTIONS



See pages 42-43 for timing diagrams.

PROTECTION

Digital 1Ø Current Protection Relay Backlit Liquid Crystal Display

FEATURES

- 1Ø - 2 Wire Input
- Monitors Under current and Over current
- True RMS measurement
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching hysteresis
- Two alarm relay with NC or NO operation selectable
- LCD with backlight
- DIN Rail Mount
- Size: 35mm (Width)



CAT. NO.

900CPR-1-BL-U

Display	
Display Type	liquid Crystal Display with backlight
Digits	1 row of 3 digits
Resolution	Current: 0.01 / 0.1 / 1A / 0.01kA
LED Indication	LED 1: Relay 1, LED 2: Relay 2
Supply Specification	
Input Voltage	85-270 V AC (50-60Hz)
Input Specification	
Input Measurement	Current Transformer-Under Current / Over Current
CT Setting	CT: Primary 1A/5A - 999A / CT secondary 1A/5A (Selectable)
Trip Setting	Under Current: 0-999A / Over Current: 0.5-1.19kA
Current Rating	Measuring Range (RMS Value) 0-1.19kA
Output Specification	
Main Output	SPDT -2 C/O - NO: 5A, 250 V AC and NC:3A, 250 V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 0.5-99.9 sec / Trip Time Delay: 0-99.9 sec / Recovery Time Delay: 0-99.9 sec / Response Time: <200ms
Alarm Indications	Trip
Hysteresis	Current: 0.1-99.9A
Latching	Selectable
Reset	Auto/Manual (Selectable)
Power Consumption	4VA max
Electrical Connection	1Ø-2 wire
Accuracy	
Current	+/- 1% of setting, +/- 2 digits
Time Setting	+/- 5% of setting, +/- 100ms
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	150 grams (.33 lbs)
Protection Level	IP50 (for faceplate), IP30 (for housing), IP20 (for terminals)

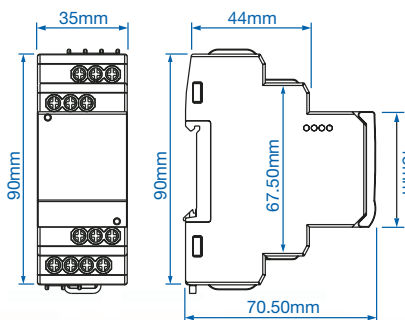
Ordering Information

Part No.	Supply Voltage	CE	RoHS	c	UL	US
900CPR-1-BL-U-CE	85-270V AC	●	●			

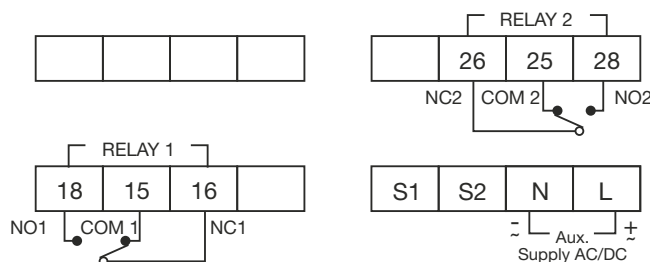
Used with SPCT

See page 12.

DIMENSIONS



TERMINAL CONNECTIONS



See pages 42-43 for timing diagrams.

PROTECTION

FEATURES

- 3Ø - 3 Wire, 3Ø - 4 Wire, 1Ø - 2 Wire Input
- Monitors Under current, Over current and Current asymmetry
- True RMS measurement
- Power ON delay, Trip time delay and Recovery time delay
- Adjustable switching hysteresis
- One alarm relay with NC or NO operation selectable
- LCD with backlight
- DIN Rail Mount
- Size: 35mm (Width)



CAT. NO.

900CPR-3-1-BL

Display	
Display Type	Liquid Crystal Display with backlight
Digits	1 row of 3 digits
Resolution	Current: 0.01 / 0.1 / 1A / 0.01kA
LED Indication	LED 1: Power On, LED 2: Relay
Supply Specification	
Input Voltage	230 V AC +/- 15% (45-65Hz) / 110 V AC +/- 15% (45-65Hz)
Input Specification	
Input Measurement	Current Transformer-Under Current / Over Current / Current Asymmetry
CT Setting	CT: Primary 1A/5A - 999A / CT secondary 1A/5A (Selectable)
Trip Setting	Under Current: 0-999A / Over Current: 0.5-1.19kA / Current Asymmetry: 5.0 - 99.9%
Current Rating	Measuring Range (RMS Value) 0-1.19kA
Output Specification	
Main Output	SPDT - 1 C/O - NO: 5A, 250 V AC and NC:3A, 250 V AC
Functional Specification	
Trip Time Settings	Power ON Delay: 0.5-99.9 sec / Trip Time Delay: 0-99.9 sec / Recovery Time Delay: 0-99.9 sec / Response Time: <200ms
Alarm Indications	Trip
Hysteresis	Current: 0.1-99.9A
Latching	Selectable
Reset	Auto/Manual (Selectable)
Power Consumption	12VA max
Electrical Connection	1Ø-2 wire, 3Ø-3 wire, 3Ø- 4 wire
Accuracy	
Current	+/- 1% of setting, +/- 2 digits
Time Setting	+/- 5% of setting, +/- 200ms
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	146 grams (.32 lbs)
Protection Level	IP50 (for faceplate), IP30 (for housing), IP20 (for terminals)

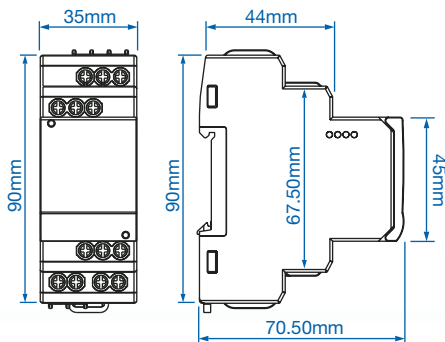
Ordering Information

Part No.	Supply Voltage	CE	RoHS	cULUS
900CPR-3-1-BL-230V-CE	230V AC	●	●	
900CPR-3-1-BL-110V-CE	110V AC	●	●	

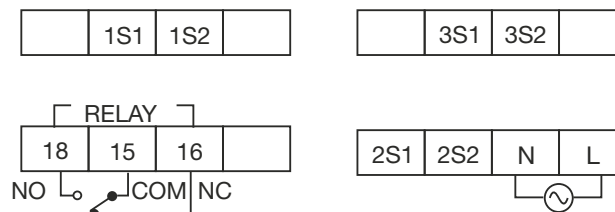
Used with SPCT

See page 12.

DIMENSIONS



TERMINAL CONNECTIONS



! See pages 42-43 for timing diagrams.

PROTECTION

FEATURES

- Use with Different Bus Bar
- Panel Mount / Din Rail Mount (Optional Accessory)
- Accuracy: Class 0.5 to 5



CAT. NO.

SPCT

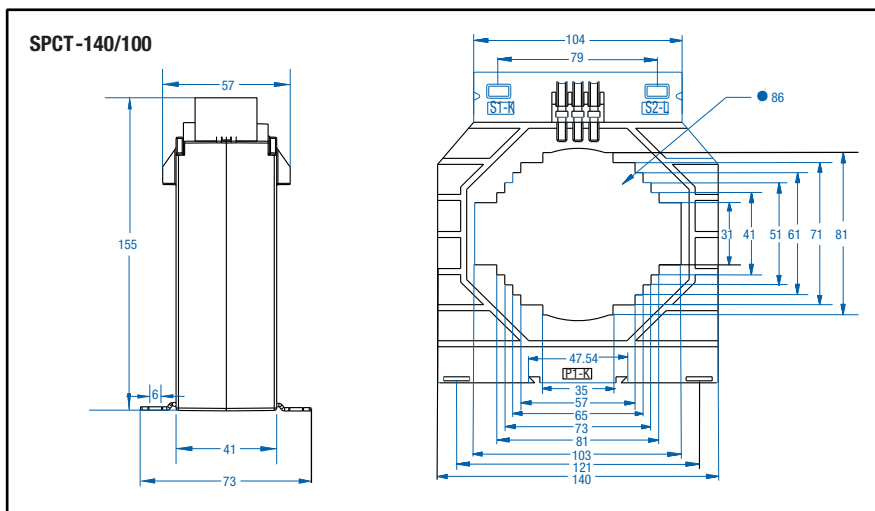
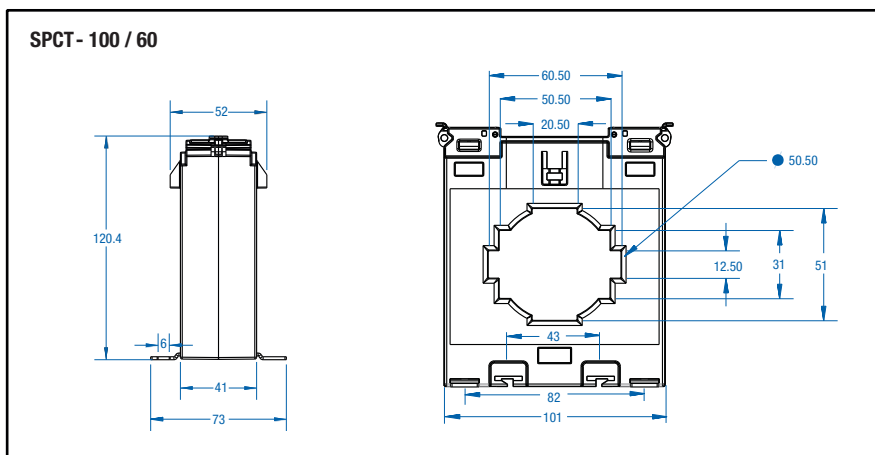
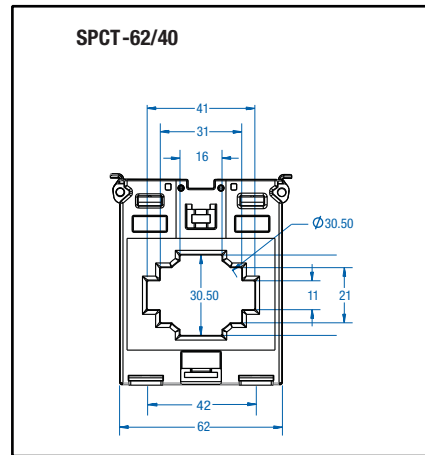
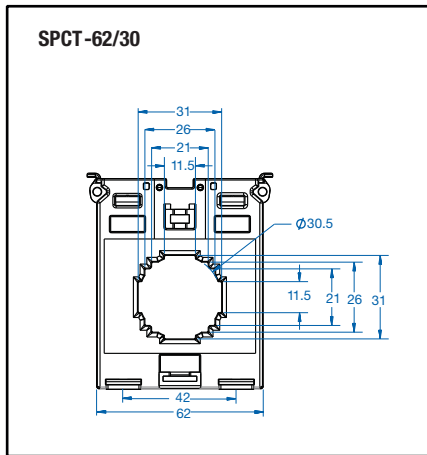
Input Specification	
Rated Primary Rating	30A-4000A
Rated secondary Rating	5A
Technical Specification	
Rated Burden	1 VA-15 VA
Class of Accuracy	0.5-5
Thermal Nominal Continuous	120% of In Rated Current (I _{cth})
Thermal Short Circuit Current (LTH)	I _{lth} =60 X I _n for 1 sec.
Instrument security Factor	FS < 5
Isolation Class	E (120°C max)
Max Operating Voltage (Um)	720 V maximum
Isolation Test Voltage	3 kV AC (1 min.)
Nominal Rated Frequency	AC 50Hz-60Hz
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-5 to 50°C (23 to 122°F)
Humidity (Non-Condensing)	95% Relative Humidity

Ordering Information

Part No.	Wire Aperture (mm)	Current Ratio	Burden in VA	Accuracy Class
SPCT 62/22 30/5 A VA 1 CL 5	DIA 22	30/5	1	5
SPCT 62/30 50/5 A VA 1 CL 3	30x10	50/5	1	3
SPCT 62/30 50/5 A VA 1.5 CL 3	30x10	50/5	1.5	3
SPCT 62/30 75/5 A VA 1 CL 3	30x10	75/5	1	3
SPCT 62/30-75/5 A VA 3 CL 3	30x10	75/5	3	3
SPCT 62/30 100/5 A VA 1 CL 1	30x10	100/5	1	1
SPCT 62/40 100/5 A VA 1 CL 1	30x10	100/5	3	1
SPCT 62/30 100/5 A VA 3 CL 1	40x10	100/5	1	1
SPCT 62/40 125/5 A VA 1 CL 1	40x10	125/5	1	1
SPCT 62/40 150/5 A VA 1.5 CL 1	40x10	150/5	1.5	1
SPCT 62/40 150/5 A VA 3 CL 1	40x10	150/5	3	1
SPCT 62/40 160/5 A VA 1.5 CL 1	40x10	160/5	1.5	1
SPCT 62/40 200/5 A VA 2.5 CL 0.5	40x10	200/5	2.5	0.5
SPCT 62/40 200/5 A VA 3 CL 1	40x10	200/5	3	1
SPCT 62/40 250/5 A VA 2.5 CL 0.5	40x10	250/5	2.5	0.5
SPCT 62/40 250/5 A VA 3 CL 1	40x10	250/5	3	1
SPCT 62/40 300/5 A VA 3 CL 0.5	40x10	300/5	3	0.5
SPCT 62/40 400/5 A VA 3.75 CL 0.5	40x10	400/5	3.75	0.5
SPCT 62/40 400/5 A VA 5 CL 1	40x10	400/5	5	1
SPCT 100/60 500/5 A VA 5 CL 1	60x12	500/5	5	1
SPCT 100/60 600/5 A VA 5 CL 0.5	60x12	600/5	5	0.5
SPCT 100/60 600/5 A VA 7.5 CL 1	60x12	600/5	7.5	1
SPCT 100/60 800/5 A VA 10 CL 0.5	60x12	800/5	10	0.5
SPCT 100/60 1000/5 A VA 15 CL 0.5	60x12	1000/5	15	0.5
SPCT 100/60 1200/5 A VA 15 CL 0.5	60x12	1200/5	15	0.5
SPCT 140/100 800/5 A VA 15 CL 0.5	100x30	800/5	15	0.5
SPCT 140/100 1000/5 A VA 15 CL 0.5	100x30	1000/5	15	0.5
SPCT 140/100 1200/5 A VA 15 CL 0.5	100x30	1200/5	15	0.5
SPCT 140/100 1250/5 A VA 15 CL 0.5	100x30	1250/5	15	0.5
SPCT 140/100 1500/5 A VA 15 CL 0.5	100x30	1500/5	15	0.5
SPCT 140/100 1600/5 A VA 15 CL 0.5	100x30	1600/5	15	0.5
SPCT 140/100 2000/5 A VA 15 CL 0.5	100x30	2000/5	15	0.5
SPCT 140/100 2500/5 A VA 15 CL 0.5	100x30	2500/5	15	0.5
SPCT 140/100 3000/5 A VA 15 CL 0.5	100x30	3000/5	15	0.5
SPCT 140/100 3500/5 A VA 15 CL 0.5	100x30	3500/5	15	0.5
SPCT 140/100 4000/5 A VA 15 CL 0.5	100x30	4000/5	15	0.5

Used with CPR modules. See pages 10-11.

DIMENSIONS



Used with CPR modules. See pages 10-11.

PROTECTION

Closed Toroid for Current Leakage Protection

FEATURES

- Compact
- Reliable and Accurate
- Flexible Design



CAT. NO.

CBCT

Input Specification	
Current Transformer Type	Closed Toroid
Turns Ratio	1000:1
Rated Current	30A
Depth	
CBCT-35-1	2.5mm
CBCT-70-1	2.5mm
CBCT-120-1	2.5mm
CBCT-210-1	2.5mm
CBCT-310-1	2.5mm
Mechanical Specification	
Wire Size (max)	0.2-1.5mm ² (AWG: 24-14)
Screw Tightening Torque	0.5 N-M
Humidity (Non-Condensing)	95% Relative Humidity
Environmental Specification	
Operating Temperature	0 to 55°C (32 to 131°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity

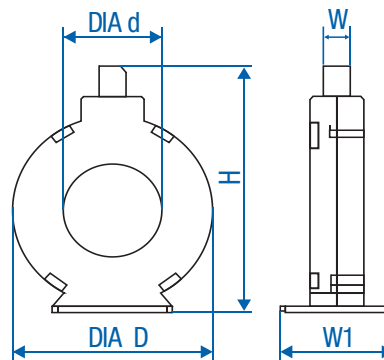
Ordering Information

Part No.	Inner Diameter	Turns Ratio
CBCT - 35-1	35mm	1000:1
CBCT - 70-1	70mm	1000:1
CBCT - 120-1	120mm	1000:1
CBCT - 210-1	210mm	1000:1
CBCT - 310-1	310mm	1000:1

DIMENSIONS

CBCT Type	D	d	H	W	W1
CBCT-35-1	64	45	96	13	52.5
CBCT-70-1	98	82	131	13	87
CBCT-120-1	149	125	184	13	122
CBCT-210-1	268	210	270	25	55
CBCT-310-1	377	310	380	25	65
Std. Tol.	2-3	5-6	-	1.5-2	-

CT Type ZPG (Zero Phase Current)



Used with ELR module. See page 7.

Control

Altech is pleased to offer a variety of process control equipment comprised of:

- Temperature Controllers
- Process Indicators
- Counters
- Rate Indicators

These components are designed to take inputs from a variety of sources and allow for the precise controlling of functions in an eased manner.



Applicable EMI / EMC Standards

Product Standard: IEC 61326-1

Products	Electromagnetic Compatibility	
Category		Standards Compliance
ESD Immunity	IEC 61000-4-2	Level III
Surge Immunity	IEC 61000-4-5	+/- 2 kV common mode, +/- 1 kV differential mode
Radiated Susceptibility	IEC 61000-4-3	Level III, 80 to 1000MHz Level II, 1.4GHz to 2GHz Level I, 2GHz to 2.7GHz
Conducted Susceptibility	IEC 61000-4-6	Level II
Voltage Dips and Interruptions	IEC 61000-4-11	Dips: 0% residual voltage / 1 cycle (Criteria B.), 40% residual voltage / 10 cycles 50 Hz / 12 cycles 60 Hz (Criteria C) 70% residual voltage / 25 cycles 50 Hz / 30 cycles 60 Hz (Criteria C) Interruptions: 0% residual voltage / 250 cycles 50 Hz / 300 cycles 60 Hz (Criteria C)
Conducted Emission	CISPR-11	
Radiated Emission	CISPR-11	
Electrical Fast Transient	IEC 61000-4-4	Level II

Single Display, 1 Output Temperature Controllers 7 Segment LED Display

FEATURES

- 3 digits, 7 segment LED single display
- TC / RTD Inputs
- PID, ON-OFF Control
- Single Setpoint
- °C / °F
- Field selectable Control Output (Relay or SSR)



TC513AX
48 x 48 mm



TC203AX
72 x 72 mm



TC303AX
96 x 96mm



CONTROL

CAT. NO.

Display	
Display Type	7 Segment LED Display
Digits	1 row of 3 digits
Resolution	Fixed 1 Degree
Supply Specification	
	85-270 V AC/DC (50/60Hz)
Input Specification	
Input Measurement	Thermocouple (J,K,T,R,S) / RTD (Pt100)
Sampling Time	0.25 sec
Input Filter (FTC)	0.2 to 10.0 sec
Output Specification	
Main Output	Selectable- SPDT- 10A @250V AC / 30V DC, resistive OR SSR Drive 12V DC, 50mA
Auxiliary Output	-
Functional Specification	
Control Action	1) PID Control with Auto Tuning 2) ON-OFF Control
PID	Proportional Band (P): 0-400° Integral Time (I): 0-99.9 sec Derivative Time (D): 0-999 sec
Alarm Mode	-
Hysteresis	0.1-99.9°
Temperature Unit	°C / °F
Cycle Time	0.1 to 99.9 sec.
Manual Reset Value	-19.9° to 19.9°
Power Consumption	5VA max @230V AC1
Set Points	1
Accuracy	
J, K,T INPUTS*	0.25% of Full Scale ±1°
R, S INPUTS*	0.5% of Full Scale ±2°
RTD INPUT	0.1% of Full Scale ±1°
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	See dimensions on next page

Ordering Information

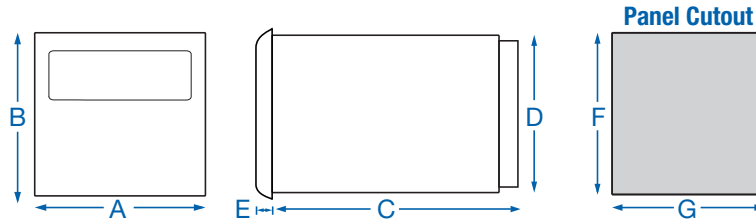
Part No.	Control Output	Supply Voltage	CE	RoHS	UL US
TC513AX-CU	10A Relay or 12V DC SSR	85 - 270V AC/DC	●	●	●
TC203AX-CU	10A Relay or 12V DC SSR	85 - 270V AC/DC	●	●	●
TC303AX-CU	10A Relay or 12V DC SSR	85 - 270V AC/DC	●	●	●

Mounting Accessories (supplied with units)

For TC513 : 48 X 48 Collar clamp ACL4802

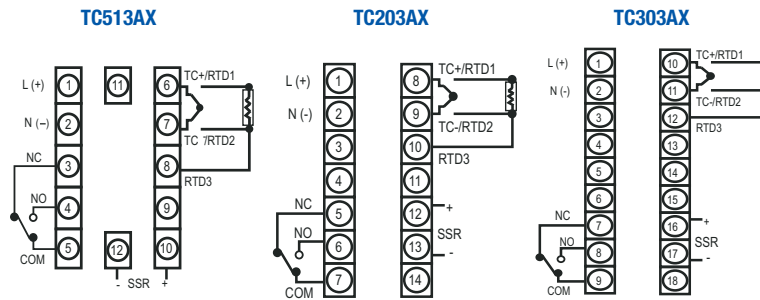
For TC203/TC303 : Clamp side with screw assembled

DIMENSIONS



	A	B	C	D	E	F	G	Weight
TC513AX	52	52	94	45	4	46	46	129 grams (.3 lbs)
TC203AX	72	72	83.7	67	4.5	69	69	180 grams (.4lbs)
TC303AX	96	96	73	90.5	5	92	92	240 grams (.52lbs)

TERMINAL CONNECTIONS



Note : NC Contact Valid for TC303AX

Input Sensor Ranges

Sensor Type	Resolution	Ranges 1
Pt100	°C	-150 to 850
	°F	-199 to 999
J	°C	-199 to 750
	°F	-199 to 999
K	°C	-199 to 999
	°F	-199 to 999
T	°C	-199 to 400
	°F	-199 to 750
R and S	°C	0 to 999
	°F	32 to 999

Accessories (Optional)

Standard SELEC accessories that can be used with this product.

Adapter plate

- 1) AP7248: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (72 x 72) cutout size.
- 2) AP9648: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (96 x 96) cutout size.
- 3) AP9672: Plastic adapter plate, used to mount 72 x 72mm size instrument into existing (96 x 96) cutout size.
- 4) AP4896-4848-G-C: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size.

Dual Display, 1 Output Temperature Controllers 7 Segment LED Display

FEATURES

- Dual Display, 3 digit, 7 segment LED
- TC/RTD Inputs
- PID, ON-OFF Control
- Single Setpoint
- °C / °F
- Field selectable Control Output (Relay or SSR)
- Easy to use
- Size: 48mm x 48mm



CAT. NO.

TC533AX

Display	
Display Type	7 Segment LED Display
Digits	2 rows of 3 digits
Resolution	1 Degree
Supply Specification	
	85 to 270 V AC/DC (50/60Hz)
Input Specification	
Input Measurement	Thermocouple (J,K,T,R,S) / RTD (Pt100)
Sampling Time	0.25 sec
Input Filter (FTC)	0.2 to 10.0 sec
Output Specification	
Main Output	Selectable- SPDT- 10A @250V AC / 30V DC, resistive OR SSR Drive - 12V DC, 50mA
Auxillary Output	
Functional Specification	
Control Action	1) PID Control with Auto Tuning 2) ON-OFF Control
PID	Proportional Band (P): 0-400° Integral Time (I): 0-999 sec Derivative Time (D): 0-200 sec
Alarm Mode	-
Hysteresis	0.1-99.9°
Temperature Unit	°C / °F
Cycle Time	0.1 to 99.9 sec.
Manual Reset Value	-19.9° to 19.9°
Power Consumption	5VA max @230V AC
Set Points	1
Accuracy	
J, K, T INPUTS*	0.25% of F.S. ±1°
R, S INPUTS*	0.5% of F.S. ±2°
RTD INPUT	0.1% of F.S. ±1°
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	129 grams (.3 lbs)

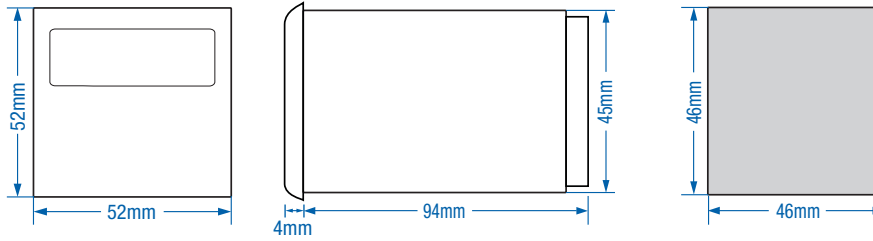
Ordering Information

Part No.	Output	Supply Voltage	CE	RoHS	c-UL US
TC533AX-CU	Relay 10A, 12V DC SSR	85-270V AC/DC	●	●	●

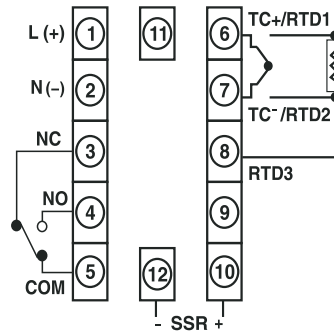
Mounting Accessories (supplied with units)

For TC533 : 48 X 48 Collar clamp ACL4802

DIMENSIONS



TERMINAL CONNECTIONS



Input Sensor Ranges

Sensor Type	Resolution	Ranges 1
Pt100	°C	-150 to 850
	°F	-199 to 999
J	°C	-199 to 750
	°F	-199 to 999
K	°C	-199 to 999
	°F	-199 to 999
T	°C	-199 to 400
	°F	-199 to 750
R and S	°C	0 to 999
	°F	32 to 999

Accessories (Optional)

Standard SELEC accessories that can be used w1th this product.

Adapter plate

1) AP7248: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (72 x 72) cutout size.

2) AP9648: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (96 x 96) cutout size.

3) AP4896-4848-G-C:

Plastic adapter plate, used to mount 1/16 DIN; (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size.

Dual Display, 2 Output Temperature Controllers 7 Segment LED Display

FEATURES

- Dual Display, 4 digits, 7 segment LED
- TC/RTD Inputs
- PID, ON-OFF Control
- Dual Setpoint
- °C / °F
- Field selectable Control Output (Relay or SSR)
- Additional Aux. Output
- Easy to use



TC544A
48 x 48 mm

TC244AX
72 x 72 mm

TC344AX
96 x 96mm

CAT. NO.

Display	
Display Type	7 Segment LED Display
Digits	2 rows of 4 digits
Resolution	1/0.1 Degree for TC/RTD / Fixed 1 Degree for R and S TC
Supply Specification	
	85-270V AC/DC (50/60Hz)
Input Specification	
Input Measurement	Thermocouple (J,K,T,R,S) / RTD (Pt100)
Sampling Time	0.25 sec
Input Filter (FTC)	0.2 to 10.0 sec
Output Specification	
Main Output	Selectable- SPDT- 5A @250V AC / 30V DC, resistive OR SSR Drive - 12V DC, 50mA
Auxiliary Output	SPDT- 5A @250V AC / 30V DC, resistive (TC544A: SPST Relay)
Functional Specification	
Control Action	1) PID Control with Auto Tuning 2) ON-OFF Control
PID	Proportional Band (P): 0-400° Integral Time (I): 0-9999 sec Derivative Time (D): 0-9999 sec
Alarm Mode	Deviation / Absolute
Hysteresis	0.1-99.9°
Temperature Unit	°C / °F
Cycle Time	0.1 to 99.9 sec.
Manual Reset Value	-19.9° to 19.9°
Power Consumption	5VA max @230V AC
Set Points	2
Accuracy	
J, K, T INPUTS*	0.25% of F.S. ±1°
R, S INPUTS*	0.5% of F.S. ±2°
RTD INPUT	0.1% of F.S. ±1°
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	See dimensions on next page

Ordering Information

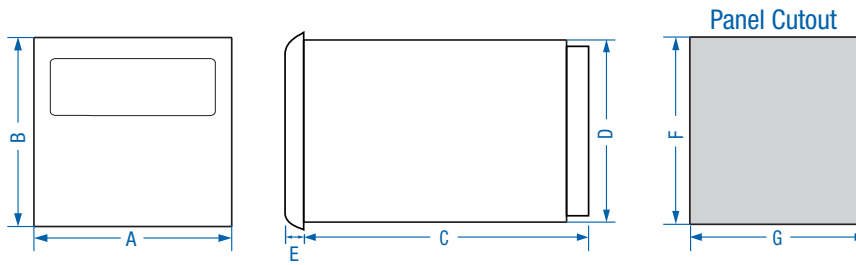
Part No.	Control Output	Auxiliary Output	Supply Voltage	CE	RoHS	UL US
TC544A-CU	10A Relay or 12V DC SSR	5A Relay	85 - 270V AC/DC	●	●	●
TC244AX-CU	10A Relay or 12V DC SSR	5A Relay	85 - 270V AC/DC	●	●	●
TC344AX-CU	10A Relay or 12V DC SSR	5A Relay	85 - 270V AC/DC	●	●	●
TC544A-1-CU	10A Relay or 12V DC SSR	SSR	85 - 270V AC/DC	●	●	●

Mounting Accessories (supplied with units)

For TC544 : 48 X 48 Collar clamp ACL4802

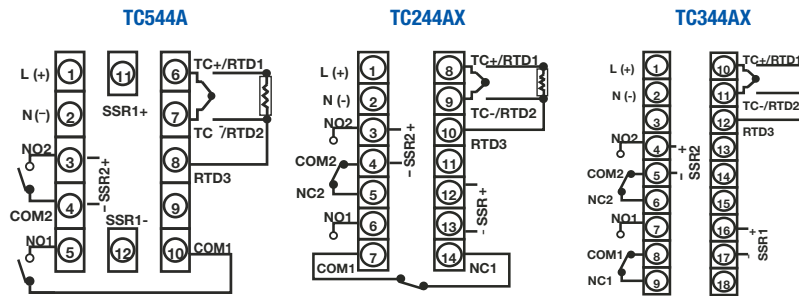
For TC244/TC344 : Clamp side with screw assembled

DIMENSIONS



	A	B	C	D	E	F	G	Weight
TC544AX	52	52	94	45	4	46	46	142 grams (.31 lbs)
TC244AX	72	72	83.7	67	4.5	69	69	200 grams (.44 lbs)
TC344AX	96	96	73	90.5	5	92	92	252 grams (.33 lbs)

TERMINAL CONNECTIONS



Input Sensor Ranges

Sensor Type	Resolution	Ranges	
		1	0.1
Pt100	°C	-150 to 850	-150 to 850
	°F	-238 to 1562	-199 to 999
J	°C	-199 to 750	-199 to 750
	°F	-328 to 1382	-199 to 999
K	°C	-199 to 1350	-199 to 999
	°F	-328 to 2462	-199 to 999
T	°C	-199 to 400	-199 to 400
	°F	-328 to 750	-199 to 750
R and S	°C	0 to 1750	NA
	°F	32 to 3182	NA

Accessories (Optional)

Standard SELEC accessories that can be used with this product.

Adapter plate

- 1) AP7248: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (72 x 72) cutout size.
- 2) AP9648: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (96 x 96) cutout size.
- 3) AP9672: Plastic adapter plate, used to mount 72 x72mm size instrument into existing (96 x 96) cutout size.
- 4) AP4896-4848-G-C: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size.

Advanced Dual Display, 3 Outputs Temperature Controllers 7 Segment LED Display

FEATURES

- 4 + 4 digits , 7 segment LED dual display
- TC / RTD Input, Analog input
- ON-OFF, PID
- Heat Cool PID
- °C / °F
- Ramp Soak
- Soft Start
- RS485 Communication (PID500 only)



CAT. NO.	PID500	PID110	PID330
Display			
Display Type	7 Segment LED Display		
Digits	2 rows of 4 digits		
Resolution	1/0.1 Degree for TC/RTD / Fixed 1 Degree for R, S & T / Decimal point position selectable 1/0.1/0.01/0.001 for analog input		
Supply Specification			
Input Voltage	85-270V AC/DC (50/60Hz)		
Input Specification			
Input Measurement	Thermocouple (J,K,T,R,S,C,E,B,N,L,U,W, Platine II) / RTD (Pt100)	Signal Inputs (-5 to 56mV, 0 to 10V, 0 to 20mA)	
Sampling Time	200msec		
Input Filter (FTC)	1 to 99 sec		
Output Specification			
Main Output	Selectable- SPST- 10A @230V AC / 30V DC, resistive OR SSR Drive(Voltage Pulse)- 12V DC, 50mA OR Current- 4-20mA DC		
Auxiliary Output	2 Selectable- SPST- 5A @230V AC / 30V DC, resistive OR SSR Drive(Voltage Pulse)- 12V DC, 20mA		
Retransmission	4 to 20mA DC, 0-10V DC (100msec. Update Rate)		
Functional Specification			
Control Action	1) PID Control with Auto Tuning 2) ON-OFF Control		
PID	Proportional Band (P): 1-400 Integral Time (I): 0-3600sec Derivative Time (D): 0-200sec		
Alarm Modes	Deviation High/Low, Absolute High/Low, Band, Sensor Break PID330- Full Scale High, Full Scale Low		
Hysteresis	0.1-99.9		
Temperature Unit	°C / °F		
Cycle Time	0.1 to 100 sec.		
Manual Reset Value	-99.9 to 19.9		
Power Consumption	5VA max @230V AC		
Set Points	2		
Accuracy			
TC INPUTS	0.25% of F.S. ±1		
R, S INPUTS	0.5% of F.S. ±2		
RTD INPUT	0.1% of F.S. ±1		
Environmental Specification			
Operating Temperature	0 to 50 C (32 to 122 F)		
Storage Temperature	-20 to 75 C (-4 to 167 F)		
Humidity (Non-Condensing)	85% Relative Humidity		
Weight	See dimensions on next page		

Ordering Information

Part No.	Output 1	Output 2	Output 3		Supply Voltage	CE	RoHS	UL US
			Relay/SSR	RS485				
PID500-0-0-01-CU	Relay	Relay	Relay	—	85-270V AC/DC	●	●	●
PID500-1-0-01-CU	SSR	Relay	Relay	—	85-270V AC/DC	●	●	●
PID500-0-0-04-CU	Relay	Relay	Relay	Yes	85-270V AC/DC	●	●	●
PID500-1-0-04-CU	SSR	Relay	Relay	Yes	85-270V AC/DC	●	●	●
PID500-1-1-04-CU	SSR	SSR	Relay	Yes	85-270V AC/DC	●	●	●
PID500-2-0-04-CU	4-20mA	Relay	Relay	Yes	85-270V AC/DC	●	●	●
PID500-3-0-04-CU	0-10V	Relay	Relay	Yes	85-270V AC/DC	●	●	●
PID110-0-0-01-CU	Relay	Relay	Relay	—	85-270V AC/DC	●	●	●
PID110-1-0-01-CU	SSR	Relay	Relay	—	85-270V AC/DC	●	●	●
PID330-0-0-01-CU	Relay	Relay	Relay	—	85-270V AC/DC	●	●	●
PID330-1-0-01-CU	SSR	Relay	Relay	—	85-270V AC/DC	●	●	●

Mounting Accessories (supplied with units)

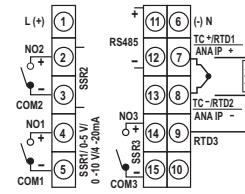
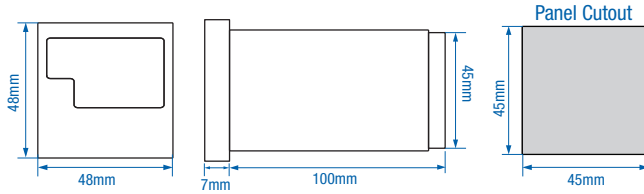
For PID500: 48 X 48 Collar clamp ACL4802

For PID110 and PID330: Clamp side with screw assembled

DIMENSIONS

TERMINAL CONNECTIONS

PID500



Weight: 95 grams (.43 lbs)

Serial Communication

Interface standard	RS485
Communication address	1 to 99, maximum of 32 units per line
Transmission mode	Half duplex
Transmission protocol	MODBUS RTU
Transmission distance	500 m maximum
Transmission speed	9600, 4800, 2400, 1200, 600, 300 bits / sec
Parity	Non, Odd, even, Mark, Space
Stop bits	1 or 2
Response Time	100 ms (Max and independent of baud rate)

Accessories (Optional)

Standard SELEC accessories that can be used with this product.

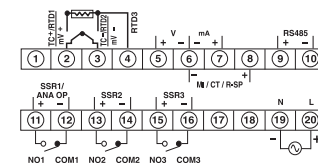
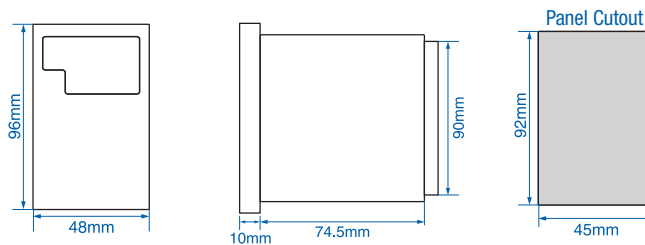
Adapter plate

- 1) AP7248: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (72 x 72) cutout size.
- 2) AP9648: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48); Instrument into existing (96 x 96) cutout size.
- 3) AP4896-4848-G-C: Plastic adapter plate, used to mount 1/16 DIN (cutout size 48 x 48) Instrument into existing (48 x 96) cutout size.

DIMENSIONS

TERMINAL CONNECTIONS

PID110

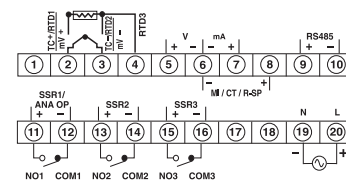
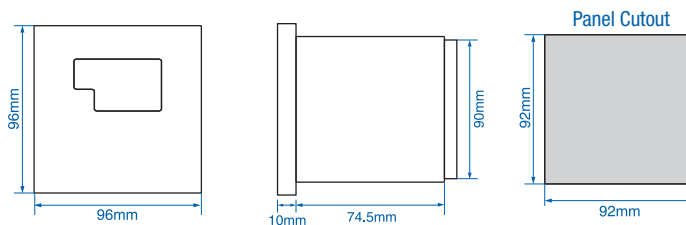


Weight: 250 grams (.55 lbs)

DIMENSIONS

TERMINAL CONNECTIONS

PID5330



Weight: 295 grams (.65 lbs)

Cooling Controller 7 Segment LED Display

FEATURES

- 3 Digit 7, Segment LED
- °C / °F
- Defrost Management
- High and Low Temperature Alarm
- Up to 20A Relay Output
- Compact Size
- Easy to use
- Size: 36mm x 72mm



CAT. NO.

CH403

Display	
Display Type	7 Segment LED Display
Digits	1 row of 3 digits
Resolution	1/0.1 Degree for NTC
LED Indication	Set point lock / Defrost / Relay ON / Alarm
Supply Specification	
Input Voltage	85-270V AC/DC (50/60Hz)
Input specification	
Input Measurement	NTC probe
Thermistor Range	-40 to 100° C
Output Specification	
Main Output	SPDT - 10A @ 230V AC, resistive Optional- SPST - 20A @ 230V AC, resistive (no alarm)
Optional Alarm Output	SPST - 5A @ 230V AC, resistive OR SSR Drive - 12V DC, 10mA
Functional Specification	
Control Action	On-Off
Mode	Heat and Cool
Alarm Modes	High alarm, Low Alarm
Hysteresis	0.1-9.9°
Temperature Unit	°C / °F
Defrost Time / Frequency	Programmable from 0-99min , 0-99 sec/min/hr
Restart Time Delay	Adjustable 0-99min
Power Consumption	5VA max @230V AC
Setpoints	1
Accuracy	
NTC Input	0.25% of Full Scale ±1°C
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	110 grams (.242 lbs)

Ordering Information

Part No.	Control Output	Alarm Output	Supply Voltage	CE	RoHS	UL
CH403-1-NTC-CU	10A Relay	12V DC SSR	85-270V AC/DC	●	●	●
CH403-2-NTC-CU	20A Relay	-	85-270V AC/DC	●	●	●
CH403-3-NTC-CU	10A Relay	5A Relay	85-270V AC/DC	●	●	●

Accessory (also available separately on request)

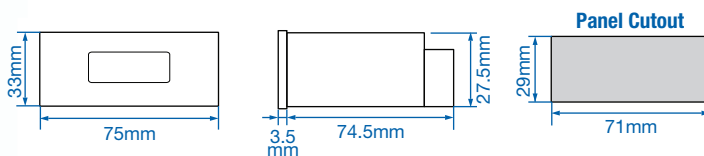
Model	Sensor Type	Temperature Range	Nominal Resistance
TSP04	NTC probe	-40 to +100 °C	10 K ohms @ 25°C



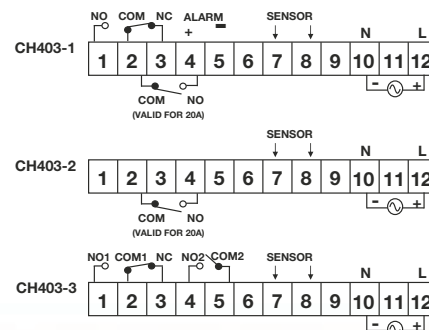
Sensor Provided with Product

NTC Sensor	TSP04
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DIMENSIONS



TERMINAL CONNECTIONS



FEATURES

- 4 Digit 7 Segment LED
- TC / RTD / Analog Inputs
- °C / °F
- 24V DC Sensor Supply



CAT. NO.

PIC101N

Display	
Display Type	7 Segment LED Display
Digits	1 row of 4 digits
Resolution	1/0.1 Degree for TC/RTD only. Decimal point position selectable 1/0.1/0.01/0.001 for analog input
LED Indication	-
Supply Specification	
Input Voltage	85-270V AC/DC (50/60Hz)
Input Specification	
Input Measurement	Thermocouple (J,K,T,R,S) RTD (Pt100) DC Analog Inputs (-5 to 56mV, 0 to 10V, 0/4 to 20mA)
Output Specification	
Sensor Supply	24V DC, 30mA
Functional Specification	
Temperature Unit	°C / °F
Power Consumption	5VA max @230V AC
Accuracy	
TC INPUTS	.25% of Full Scale ±1°
R, S INPUTS	.5% of Full Scale ±2°
RTD INPUT	.1% of Full Scale ±1°
ANALOG INPUT	'+/- .5% of Full Scale, +/- 1 digit
Environmental Specification	
Operating Temperature	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 75°C (-4 to 167°F)
Humidity (Non-Condensing)	95% Relative Humidity
Weight	200 grams (44 lbs)

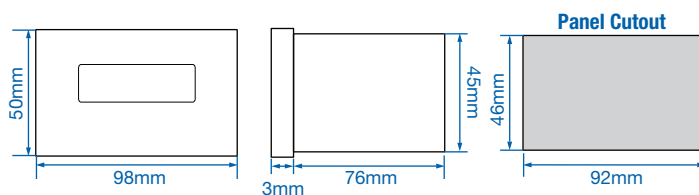
Ordering Information

Part No.	Supply Voltage	CE	RoHS	cRU US
PIC101N-CU	85-270V AC/DC	●	●	●

Mounting Accessories (supplied with units)

Clamp side with screw assembled

DIMENSIONS



TERMINAL CONNECTIONS

