



COMPACT THERMAL CONTROLLER



- SMART TUNE - PID CONTROL
- UNIVERSAL INPUT, 3 WIRE- TC, RTD
- 2 RELAY/ SSR OUTPUTS
- SOFT START - POWER LIMITER
- PROCESS, BAND, DEVIATION AND CONTROL FAULT ALARMS
- IP 65 AND NEMA 4X FRONT PROTECTION

PROELECTRONIC

PRODUCT SPECIFICATIONS

Case:	polycarbonate case.
Self extinguishing degree:	V-2 according to UL 746 C.
Front protection:	designed and tested for IP 65 and NEMA 4X for indoor locations (when panel gasket is installed). tested accordance with IEC 529, CEI 70-1 and NEMA 250-1991 STD.
Dimensions:	24 x 48mm. Depth 102mm (according to DIN 43700)
Weight:	90g max.
Power supply:	- (switching mode) 100V to 240V AC 50/60Hz (-15% to + 10% of the nominal value). - 24V AC/DC ($\pm 10\%$ of the nominal value).
Power consumption:	2.5VA.
Common mode rejection ratio:	120dB @ 50/60Hz.
Normal mode rejection ratio:	60dB @ 50/60Hz.
EMC/Safety :	this instrument is marked CE, it conforms to council directives 89/336/EEC (reference harmonized standard EN-50081-2 and EN-50082-2), 73/23/EEC and 93/68/EEC (reference harmon. standard EN61010-1).
Installation category:	II.
Sampling time:	250mSec for linear inputs 500mSec for TC or RTD inputs
Accuracy:	+ 0.2% f.s.v. @ 25°C (77°F) and nominal power supply voltage.
Operative temperature:	from 0 to +50°C (32 to 122°F).
Storage temperature:	from - 20 to +70°C (-4 to 158°F).
Humidity:	from 20% to 85% RH not condensing.

MEASURING INPUTS

Thermocouples

Sensor Break:	detection of the open input circuit (wires or sensor) with over range indication.
Cold junction:	automatic compensation for an ambient temperature between 0 and 50°C.
Cold junction compensation error:	0.1°C/°C.
Calibration:	according to IEC 584-1.

RTD input

Type:	Pt 100 3 wire.
Calibration:	according to DIN 43760.
Line resistance:	max 20Ω/wire with no measurable error.
Sensor Break:	detection of the open input circuit (wires or sensor) with over range indication. the instrument shows the short circuit indication when the sensor resistance is less than 12Ω.

Linear input

Type:	0-60mV. 12-60mV.
Read-out:	-1999 to 9999.
Decimal point:	programmable in any position.

Standard range table

TC type	°C	°F
L	-100/900	-150/1650
L	-100/900	-150/1650
J	-100/1000	-0,018450185
J	-100.0/999.9	-150/8130
K	-100/1370	-150/2500
K	-100.0/999.9	-150/2500
N	-100/1400	-150/2550
R	-50/1760	-60/3200
S	-50/1760	-60/3200
T	-200/400	-330/750
T	-199.9/400.0	-330/750

Standard range table

RTD type	°C	°F
Pt 100	-199.9/850.0	-199.9/999.9
Pt 100	-200/850	-330/1560

CONTROL ACTION

Algorithm:	PID + SMART.
Types:	- one control output - two control outputs.
Output types:	relay or SSR.
Output control action:	proportional time.
Proportional Band:	from 1.0% to 100.0% of the input span. Setting a PB equal to 0, the control action becomes ON/OFF.

Hysteresis (for ON/OFF control action):	from 0.1% to 10.0% of the input span.
Integral time:	from 1 second to 20 minutes or excluded.
Derivative time:	from 1 second to 10 minutes or excluded.
Integral preload:	- for one control output, from 0 to 100% of the output ranges. - for two control outputs, from -100% to +100% of the heating/cooling output range.
Main output cycle time:	from 1 second to 200 seconds.
Secondary output cycle time:	from 1 to 200 seconds
ARW action:	from 10% to 200% of the proportional band.
Relative secondary output gain:	from 0.20 to 1.00 referred to the proportional band.
Overlap / dead band:	from -20% (dead band) to +50% (overlap) of the proportional band.
Output limiters:	- output high limit - output low limit - output max. rate of rise.

OUTPUTS 1 & 2

Function:

Singularly programmable as: - control output
- alarm output

Out 1 & 2 - Relay

Relay type: SPST.
Contact rating: 3A @ 250V on resistive load.

Out 1 & 2 - SSR

Type: un-isolated outputs
- Logic level 1: 14V DC @ 20mA max. 24V DC @ 1mA.
- Logic level 0: <0.5V DC

ALARMS

Alarm action:	direct or reverse.
Alarm functions:	each alarm can be configured as a process alarm, band alarm or deviation alarm.
Alarm reset:	automatic or manual reset programmable for each alarm.
Alarm masking:	each alarm can be configured as a masked alarm or standard alarm.
Hysteresis:	programmable engineering units from 1 to 200 digits.

Process alarm

Operative mode: minimum or maximum (programmable).
Threshold: programmable in engineering units within the input range.

Band alarm

Operative mode: inside or outside band (programmable).
Threshold: low - from 0 to -1000 units.
high - from 0 to +1000 units.

Deviation alarm

Operative mode: high or low deviation (programmable).
Threshold: programmable from -1000 to +1000 units.

Loop break alarm

Operative mode: automatically activated when the power output reaches the programmed limits.
Time interval: programmable from 1 second to 40 minutes.
Deviation: programmable from 0 to 500 digits.
Hysteresis: from 1 to 50% of the input span.

HOW TO ORDER

MODEL	INPUT	OUTPUT 1 AND 2:	POWER SUPPLY	CUSTOMISATION	INTERFACE
FKS 1/32 DIN	6 TC, RTD, mV	11 Two relay outputs 61 One relay output + one SSR 66 Two SSR outputs	3 100 - 240V AC 5 24V AC/DC	00000 Std ERO Label 000B0 no label no manual 000XX Customisation	00 Standard 01 Mark 1 (*)
FKS	6				

(*) MK1: simplified operation and configuration menu similar to LDE,LME, LMS.

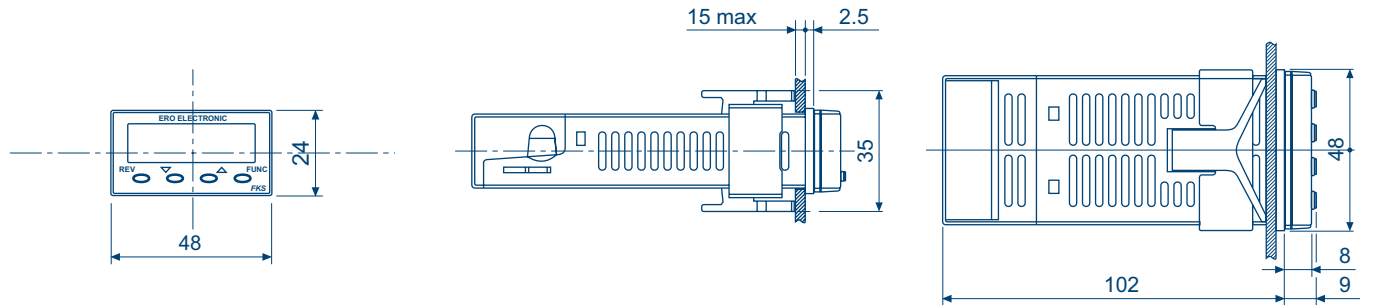
HOW TO ORDER - ACCESSORIES

INPUT ADAPTOR 0- 20mA
APARTMAV00000

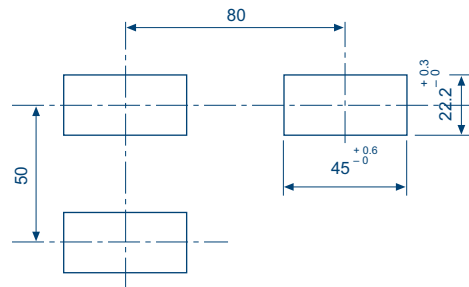
INPUT ADAPTOR 0-10V
APART10V00000

INPUT ADAPTOR 0-5V
APART05V00000

DIMENSIONS



PANEL CUT - OUT



REAR TERMINAL BLOCK

