

FKS

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

ERORELECTRONIC



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 20 Ω /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 12 Ω .

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	-150/8130
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	
<i>Operative mode:</i>	minimum or maximum (programmable).
<i>Threshold:</i>	programmable in engineering units within the input range.
Band alarm	
<i>Operative mode:</i>	inside or outside band (programmable).
<i>Threshold:</i>	low - from 0 to -1000 units. high - from 0 to +1000 units.
Deviation alarm	
<i>Operative mode:</i>	high or low deviation (programmable).
<i>Threshold:</i>	programmable from -1000 to +1000 units.
Loop break alarm	
<i>Operative mode:</i>	automatically activated when the power output reaches the programmed limits.
<i>Time interval:</i>	programmable from 1 second to 40 minutes.
<i>Deviation:</i>	programmable from 0 to 500 digits.
<i>Hysteresis:</i>	from 1 to 50% of the input span.



HOW TO ORDER

MODEL	INPUT	OUTPUT 1 AND 2:	POWER SUPPLY	INTERFACE	CUSTOMISATION
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	00 Standard 01 Mark 1 (*)	00000 Std ERO Label 000B0 no label-no manual
FKS	6				

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

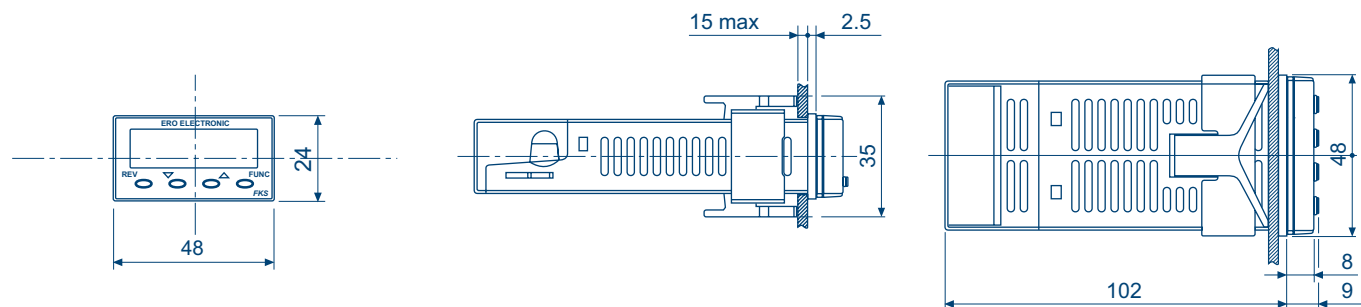
HOW TO ORDER - ACCESSORIES

INPUT ADAPTOR 0- 20mA
APARTMAV00000

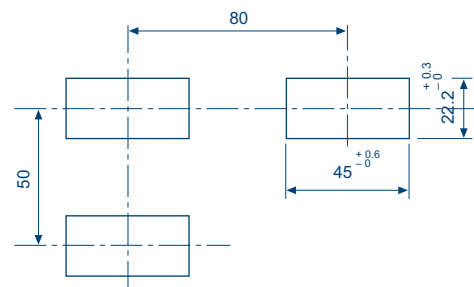
INPUT ADAPTOR 0-10V
APART10V00000

INPUT ADAPTOR 0-5V
APART05V00000

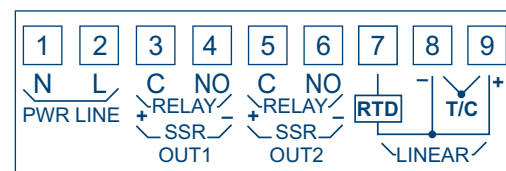
DIMENSIONS



PANEL CUT - OUT



REAR TERMINAL BLOCK



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