DPS

INDICATOR - ALARM UNITS

IP 65 NEMA 4X

DPS

- UNIVERSAL, 3 WIRE- TC, RTD AND LINEAR INPUT
- INPUT FILTER AND RANGE SCALING
- ISOLATED PV RETRANSMISSION
- 2 INDEPENDENT ALARMS
- PEAK MAX/ MIN LEVEL MEMORY
- 10-POINT LINEARISATION AND SQUARE ROOT
- ISOLATED 24V TRANSMITTER POWER SUPPLY
- RS 485 SERIAL INTERFACE OPTION
- IP 65 AND NEMA 4X FRONT PROTECTION

ROELECTRONIC

OVERVIEW

Designed specifically for applications requiring high accuracy process monitoring and alarm, the DPS is easy to configure and use. Factory calibrated, the DPS accepts universal inputs selectable from the front panel and programmable with filtering and sensor break indication. Additionally, a 10-segment linearization can be programmed over the entire span. Display accuracy is 0.1% of span.
A bright display with 5 beacons provides process variable, engineering units, alarm status and other important process and configuration information to the operator. There is also a peak high/ peak low detection feature that memorises the highest and lowest detected process variable reading.

SPECIAL FUNCTIONS

Process Protection Alarm
The DPS has 2 independent latchable alarm relays, programmed with password protection for high or low process alarms with a hysteresis of 0.1 to 5% of span.
Alarms can be acknowledged automatically, or from the keypad

Auxiliary Power Supply
An auxiliary isolated power supply for powering external transducers.
Jumper selectable outputs at 5, 10, 12 or 24V (25mA max.) are available.

Linear Retransmission
A linear analogue retransmission output of the process variable is available as an isolated, 0 to 20mA or 0 to 10V signal. This output is programmable and can have a digital filter applied to the retransmission.

OPTIONAL FEATURES

Digital Communications
Digital communications featuring an opto-isolated EIA RS-485 communications port with Modbus ® or JBUS protocol (this option is not available with the retransmission output). A closed logic input enables remote operation.

ADDITIONAL FUNCTIONS

Peak detection
Visualisation of the min. and max. value measured by the instrument.

Digital filter
During configuration procedure, it is possible to set a software filter on the readout with a time constant of 0.4, 1, 2, 3, 4 or 5 seconds. This filter can be set for analog retransmission and alarms threshold also.

Logic input
1 input by external contact for:
a. holding the measured value.
b. manual reset of the alarms.

Safety lock
For protection of the alarm threshold value.

Dip switch
To select between the 3 modes:
1. configuration mode.
2. calibration mode.
3. operative mode.

PRODUCT SPECIFICATIONS

Case:	PC/ABS black color
Self-extinguishing degree:	V-0 according to UL 746C
Front protection:	designed and tested for IP 65 (*) and NEMA 4X (*) for indoor locations (when panel gasket is installed). (*) test were performed in accordance with CEI 70-1 and NEMA 250-1991 STD.
Rear terminal:	rear safety cover. IP20 protection.
Dimensions:	48 x 96mm, DIN 43700, depth 14 mm.
Weight:	600g max.
Power supply:	100V to 240V A.C. 50/60 Hz; 24V AC/DC.
Power supply variations:	±10% of the nominal value.
Power consumption:	6VA max.
Insulation resistance:	>100MΩ according to IEC 1010-1.
Insulation strength:	according to IEC 1010-1.
Common mode reiection ratio:	120dB @ 50/60Hz.
Normal mode reiection 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 harmonized standard EN 61010-1).
Installation category:	II.
Sampling time:	100mSec typical.
Display updating time:	400mSec typica
Temperature drift:	< 200 ppm/°C on fsv (CJ excluded).
Accuracy:	± 0.1% fsv ±1 digit @ 25°C ambient temperature.
Ambient temperature:	0-50°C.
Storage temperature:	-20 to +70°C.
Humidity:	85% RH, non condensing.

MEASURING INPUTS

Thermocouples

Type of TC and °C/°F: selection via front pushbuttons.
External resistance: 100Ω max, with maximum error 0.1% of span.
Cold junction: automatic compensation 0-50°C.
Sensor break: up scale or down scale, programmable.
Input impedance: > 1 KΩ.
Calibration: according to IEC 584-1.

Standard range table

TC type	°C	°F	Note
B	0/+1820	+32/+3300	(1)
E	-199.9/+800.0	-328/+1470	
J	-199.9/+999.9	-328/+1860	
Fe-CuNi	-199.9/+900.0	-328/+1650	DIN 43710-1977
K	-199.9/+1370	-328/+2500	(2)
R	-50/1760	-58/+3200	
S	-50/1760	-58/+3200	
T	-199.9/-400.0	-328/+750	
Cu-CuNi	-199.9/+600.0	-328/+1110	DIN 43710-1977
N	0/+1300	+32/+2370	
W	0/+2310	+32/+4190	
W3	0/+2310	+32/+4190	ASTM-E988/84
W5	0/+2310	+32/+4190	ASTM-E988/84
Ni/Ni-Mo	0/+1200	+32/+2192	GE.Co.
Platinel II	-10/1400	+14/+2550	GHOST

note: 1) Accuracy and resolution guaranteed from 300°C (570°F).
2) Resolution 1/10°C up to 999.9°C

RTD input (Resistance Temperature Detector)

Input: for Pt100Ω RTD and Ni 100Ω,
3-wire connection with °C/°F selectable by front pushbuttons.
Input circuit: current injection (100 μA).
Line resistance: automatic compensation up to 3Ω/wire with no measurable error.
Calibration: according to DIN 43760.
Standard ranges: see table.
Sensor break: up scale or down scale programmable.

Current input

Input type: 0-20 and 4-20mA selectable via front pushbuttons.
Input impedance: 3Ω.
Readout: keyboard programmable between -1999 and +9999.
Linearization: all types of non linear input signals may be linearized by setting up to 9 breakpoints (10 segments) on the input span.
Square root extraction: programmable.
Decimal point: programmable in any position.
Sensor break: down scale.

Standard range table

Input type	°F Ranges	°C
RTD Pt 100Ω	-328/+1560	-199,9/+850.0
RTD Ni 100Ω	-76/+660	-60.0/+350.0

Standard range table

Input type	°F Ranges	°C
0-20 mA	0,1% ± digit@25°C	1 digit
4-20 mA	0,1% ± digit@25°C	1 digit

Voltage input

Input type: selectable via front pushbuttons.
Input impedance: see table.
Internal readout: keyboard programmable between -1999 and +9999.
Linearization: all types of non linear inputs signals may be linearized by setting up to 9 breakpoints (10 segments) on the input span.
Square root extraction: programmable in any position.
Decimal point: programmable in any position.
Sensor break: up scale for millivoltage input. Down scale for voltage.

Standard range table

Input type	Input Impedance	Accurancy
0-60 mV	≥ 800 kΩ	0,1% ± digit@25°C
12-60 mV	≥ 800 kΩ	0,1% ± digit@25°C
0-5 V	≥ 200 kΩ	0,1% ± digit@25°C
1-5 V	≥ 200 kΩ	0,1% ± digit@25°C
0-10 V	≥ 200 kΩ	0,1% ± digit@25°C
2-10 V	≥ 200 kΩ	0,1% ± digit@25°C

ALARMS

Number of alarms:	two, independent.
Threshold:	from 0 to 100% of the readout span.
Hysteresis:	programmable from 0.1 to 5.0% of the readout span.
Type of alarm:	high or low alarm, programmable.
Reset:	automatic manual or programmable. The manual reset of the alarms is possible by front pushbuttons individually or by external contact collectively.
Software filter:	it is possible to select the same filter chosen for readout value.
Alarm outputs:	two relays, SPST, NC or NO selectable by jumpers.
Contact rating:	2A - 30V DC on resistive load 0.6A - 110V DC on resistive load 0.5A - 250V AC on resistive load 0.3A - 110V DC on inductive load.
Relays status:	relay energized in non alarm condition.
Alarms indication:	AL1 and AL2 lit for alarm ON.

OPTIONS

Serial Communication Interface

Type:	RS-485 optoisliated.
Communication type:	bi-directional half duplex.
Protocol:	type ModBus, JBus or Polling/Selecting
Baud rate:	from 150 baud to 19200 baud.
Byte:	7 bits + parity bit. 8 bits + parity bit. 8 bits no parity bit.
Parity:	even or odd.
Stop bit:	one.
Address:	from 0 to 31.
Parity:	even or odd.
Stop bit:	one.

Analog retransmission

Retransmission of the process variable.

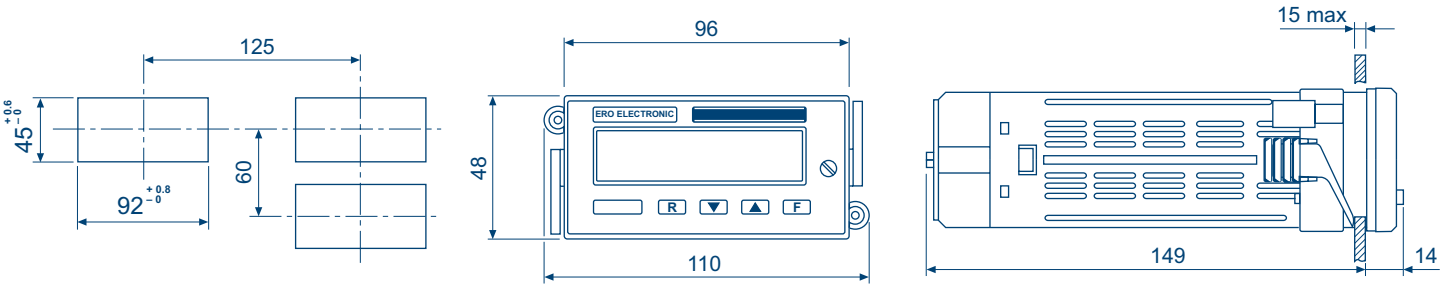
Scale:	programmabile da -1999 a 9999.
Output type:	0-20mA or 4-20 mA, maximum load 500 **Ω**, optoisolated.
Resolution:	± 0.1% of the output span.
Accuracy:	0.2% of the output span @ 25°C.
Temperature drift:	< 100ppm/°C.
Digital filter:	it is possible to select the same filter chosen for readout value.

note: the analog retransmission excludes the serial interface option.

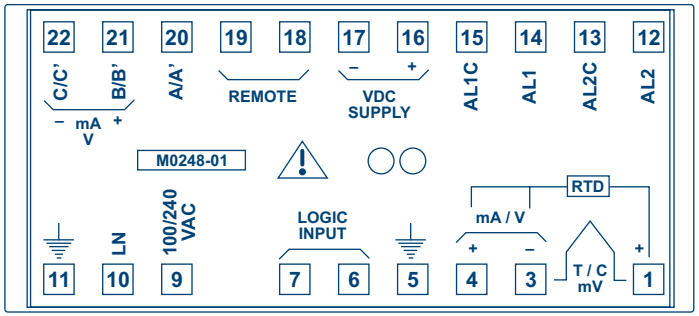
Auxiliary power supply

Isolation:	galvanically isolated from instrument input and output.
Voltage output:	5, 10, 12 or 24V DC.
Accuracy:	± 5%.
Max. current:	25mA.

DIMENSIONS and PANEL CUT - OUT



REAR TERMINAL BLOCK



DPS

HOW TO ORDER

MODEL	POWER SUPPLY	INPUT	ALARMS	OPTIONS	CUSTOMISATION
DPS Digital Panel Indicator	3 100-240V AC 5 24V AC/DC Available on request	9 TC, mV, mA, V, RTD	1 2 alarms	1 Auxiliary power supply 2 mA analog retransmission + Auxiliary power supply 3 RS-485 + Auxiliary power supply 4 RS-485 5 mA analog retransmission	0000 Std ERO Label 0000F Modbus, Jbus
DPS		**9**	**1**		

ERO ELECTRONIC
VIA XXIV MAGGIO 22070 GUANZATE (CO) ITALY
TEL. + 39 031 975 111 FAX. + 39 031 977 512
SALES@EROELECTRONIC.COM - WWW.EROELECTRONIC.COM
ERO ELECTRONIC a division of EUROTHERM S.r.l.