



FEMA ELECTRÓNICA, S.A.

SERIE : LAP-35 Model : 30

FUNCTION : Process Indicator Loop Powered

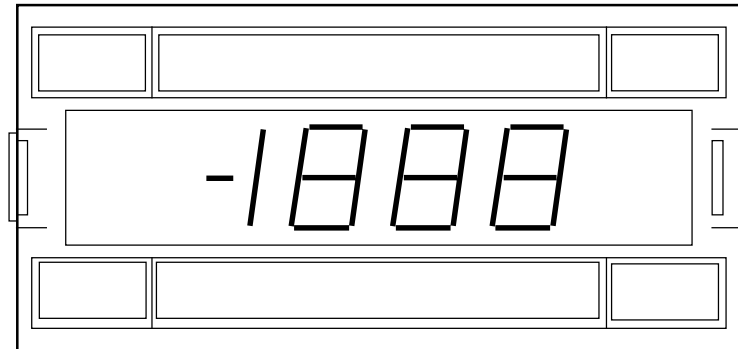
Data Sheet:

12/95

REV. 2509/01

**INSTRUMENT WITH "LCD" DISPLAY  
AUTOPOWERED FROM CURRENT LOOP SIGNAL.  
ALLOWS PROCESS SIGNALS : 1...5 mA; 4...20 mA; 10...50 mA**

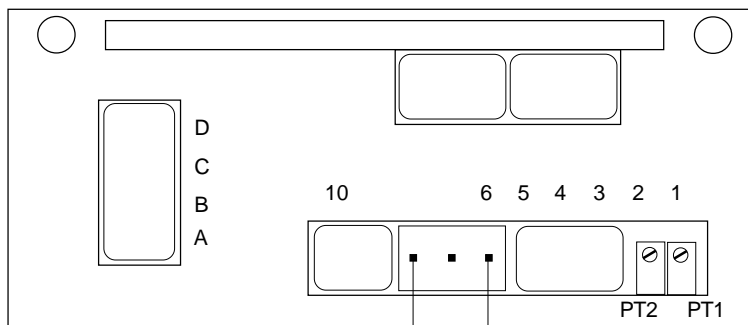
FRONT VIEW



SPECIFICATIONS

DISPLAY	TYPE LCD, 12.7 mm HEIGHT DIGIT
SYMBOLS	1888
INPUT CONFIGURATION	SINGLE BIPOLAR
RANGES	SEE TABLE 1
CONVERTER	A/D DUAL SLOPE
POLARITY	AUTOMATIC, ONLY MINUS
CMMR	BETTER THAN 120dB
CONSUMPTION	max. 0.3 mA.
MAX. DROP VOLTAGE	5 V.
OPERATING TEMPERATURE	0 to 70 °C.
WEIGHT	150 gr.
ELECTRICAL CONNECTIONS	SCREW CLAMP CONNECTORS
BOX	DIN 43700, ABS POLYCARBONATE BLACK COLOUR

REAR VIEW



SIGNAL INPUT

PT1: OFFSET ADJUST, CORRESPOND TO INDICATION OF THE LOW SIGNAL.  
PT2: SPAN ADJUST, CORRESPOND TO INDICATION OF THE HIGH SIGNAL.

## JUMPERS SELECTION FOR OFFSET AND SPAN ADJUST

SELECT ON THE SELECTOR S3, THE SUITABLE JUMPERS FOR THE SPAN VALUE DESIRED, THE OFFSET VARIATION VALUE IS GIVEN BY THE SELECTED SPAN TYPE.

SPAN RANGE	CLOSE JUMPERS	OFFSET RANGE
385 to 785	S3-A and S3-G	-160 to 96
750 to 1500	S3-B and S3-G	-260 to 200
1090 to 1999	S3-G	-380 to 560

CONNECT THE INSTRUMENT AT A CURRENT LOOP, APPLYING THE MINIMUM VALUE OF THE SELECTED SIGNAL, THEN TURN THE TRIMMER PT1, TO THE LEFT OR RIGHT SIDES, UNTIL TO GET THE DESIRED VALUE IN THE DISPLAY, FOR THE LOW SIGNAL LEVEL INPUT. STRAIGHT AWAY, APPLY AT A CURRENT LOOP, THE MAXIMUM VALUE OF THE SELECTED SIGNAL, THEN TURN THE TRIMMER PT2 TO THE LEFT OR THE RIGHT SIDES, UNTIL TO GET THE DESIRED VALUE IN THE DISPLAY, FOR THE HIGH SIGNAL LEVEL INPUT.

### DISPLAY READING TYPE SELECTION

DISPLAY READING	CLOSE JUMPER
DIRECT	S2-D, S2-E, S3-E and S3-F
INVERTED	S2-C and S2-F

**DIRECT** : IS WHEN THE MAXIMUM DISPLAY READING, CORRESPOND TO THE HIGH SIGNAL INPUT, AND DECREASE AT THE SAME TIME THAT THE SIGNAL DECREASE.

**INVERTED** : IS WHEN THE MAXIMUM DISPLAY READING, CORRESPOND TO THE LOW SIGNAL INPUT AND DECREASE AT THE SAME TIME THAT THE SIGNAL INCREASE.

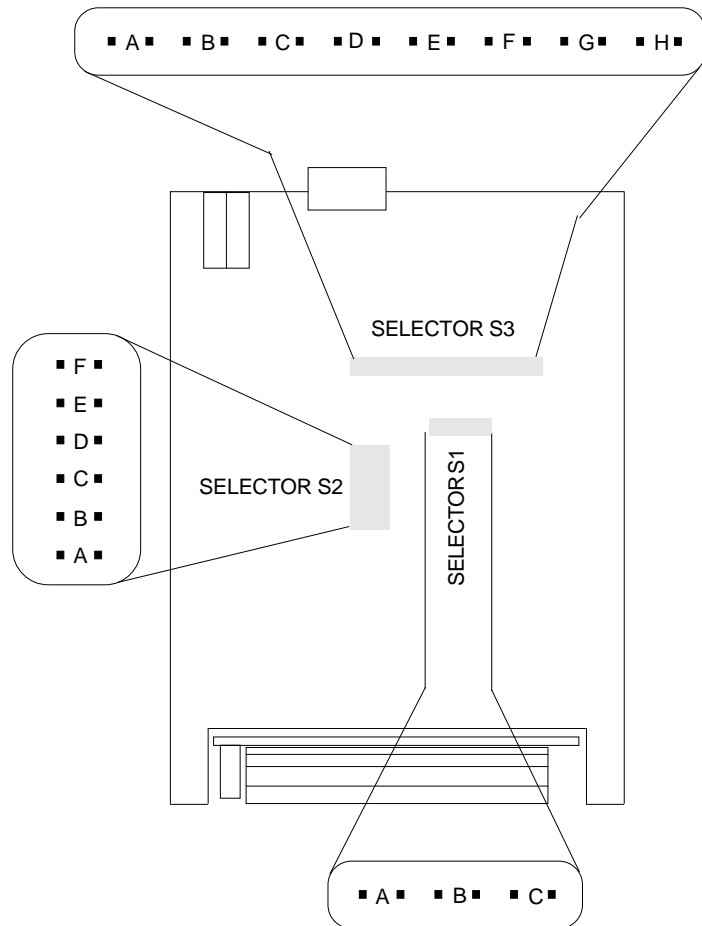
### SIGNAL INPUT SELECTION

INPUT TYPE	CLOSE JUMPER
1...5 mA	-----
4...20 mA	S2-B
10...50 mA	S2-A

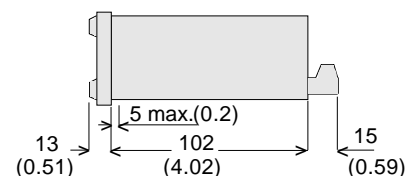
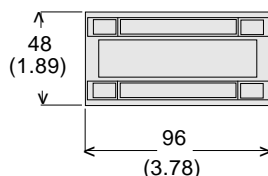
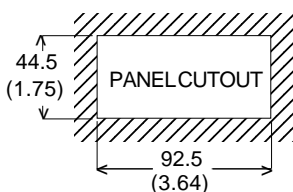
DECIMAL POINT CAN BE SET INDEPENDENTLY OF SIGNAL INPUT. FOR INSTANCE A SIGNAL INPUT OF 4...20 mA CAN BE DISPLAYED AS 0...1500 Kg./ 0...150.0 PSI / 0...15.00 BAR / 0... 1.500 M<sup>3</sup>/ MINUTE.

### DECIMAL POINT SELECTION

DISPLAY READING	CLOSE JUMPER
1.XXX	S1-C
1X .XX	S1-A
1XX .X	S1-B



### MECHANICAL DIMENSIONS, mm. (in.)



## INSTALLATION

### PRECAUTIONS



The installation and the future use of this unit must be done by suitably qualified personnel. This unit has not AC (mains) switch, neither internal protection fuse, it will be in operation as soon as power is connected. The installation must incorporate an external mains switch with a protection fuse, except for Serie BDF which has the fuse installed. The value of the fuse is indicated on the tables below. This unit can operate with Vac or Vdc, verify that the proper power option is installed for the power to be used.



### SAFETY PRESCRIPTIONS

The unit has been designed and tested under UNE 20553 rules and is delivered in good condition. This data sheet contains useful information for electrical connections. Do not make wiring signal changes or connections when power is applied to the unit. Make signal connections before power is applied and, if reconnection is required, disconnect the AC (mains) power before such wiring is attempted. The unit cannot be installed in open places. Do not use until the installation is finished.



### POWER SUPPLY

The power supply must be connected to the adequate terminals (see the connection instructions) The characteristics of the power supply are showed on the side label. Please make sure that the unit is correctly connected to a power supply of the correct voltage and frequency. Do not use any other power supply otherwise permanent damage may be caused to the unit. Do not connect the unit to power sources heavily loaded or to circuits which power loads in cycle on-off or inductive loads.

**WARNING:** If the power supply is DC voltage, be careful with the polarity indicated for each terminal. (see the connection instructions).



### SAFETY CONSIDERATIONS PRESCRIPTIONS

Before starting any operation of adjustment, replacement, maintenance or repair, the unit must be disconnected from any kind of power supply. Keep the unit clean, to assure good functioning and performance, use for it a clean and humid rag. Do not use abrasive products, solvents, alcohol, etc... to clean the red filters and plastic parts of the unit. To prevent electrical or fire hazard, do not expose the unit to excessive moisture. Do not operate the unit in the presence of flammable gases or fumes, such an environment constitutes a definite safety hazard. The unit is designed to be mounted in a metal panel. If the unit shows signs of damage, or is not able to show the expected measures, or has been stored in a bad conditions or a protection failure can occur, then do not attempt to operate and keep the unit out of service.

**WARNING:** In closed areas do not use systems with vaporized liquids.

### IN CASE OF FIRE

- 1.- Disconnect the unit from the power supply.
- 2.- Give the alarm according to the local rules.
- 3.- Switch off all the air conditioning devices.
- 4.- Attack the fire with carbonic snow, do not use water in any case.

### RECOMMENDED FUSES FOR EACH SERIE OR MODEL

Power Supply	230 Vac	115 Vac	24 Vdc
Series : LAP	50mA	100mA	

## DECLARATION OF CONFORMITY

Manufacturer: **FEMA ELECTRÓNICA, S.A.**  
Address : Centro Industrial Santiga  
c/Altimira, 14 (Talleres 14 - Nave 2)  
E-08210 - Barberà del Vallès  
SPAIN

Conforming products :

Series : LAP  
Models : LAP-35

We hereby declare that the above products conform to the essential protection requirements of Directives and Harmonised Standards stated below.

DIRECTIVES:

**EUROPEAN DIRECTIVE FOR LOW VOLTAGE D73/23/CEE AMENDED BY D93/68/CEE**  
Equipments powered from 50 to 1000 Vac. and / or from 75 to 1500 Vdc.

**ELECTROTECHNICAL REGULATION FOR LOW VOLTAGE (RBT) ITC 21, ITC 29, ITC 35.**  
Equipments with power supply lower than 50 Vac. and/or 75 Vdc.

**EUROPEAN DIRECTIVE FOR ELECTROMAGNETIC COMPATIBILITY D89/336/CEE AMENDED BY D93/68/CEE**

STANDARDS:

IMMUNITY  
**UNE EN 50082-1 (1997)**

EMISSIONS  
**UNE EN 50081-1 (1993)**

ELECTRICAL SAFETY  
**UNE EN 61010-1 (1996)**  
**UNE EN 60204-1 (1997)**

Signed : Alex Pina  
Position : Quality Manager  
Place and Date : Barberà del Vallés, 2001

### Recommendations

The panel meters of the current series have been designed in order to be mounted on metal panels, connected to earth.

NEVER lay together signal cables with power supply cables, through the same channel.

Whenever electromagnetic compatibility is an issue, use shielded cables, for both signal and power supply cables.

It is recommended to let the power supply cables go through a ferrite. If possible, let the cable cross twice through the ferrite, and maintain the ferrite the closest possible to the instrument.

It is recommended to let the signal cables go through a ferrite. If possible, let the cable cross twice through the ferrite, and maintain the ferrite the closest possible to the instrument.

Connect the shields of the signal cable and power supply cable to the metallic panel, which is at his side connected to earth.

Notes:

If electromagneteic interferences are atill an issue, try one or more of the following indications :

- use connectors with metallic shields when need to connect periferics to the system. Connect the shield of the cable to the shield of the connector.

- disconnect the cable shield of the power supply or/and signal cables.

- if your instrument is powered with direct current (DC), connect the negative terminal of the DC power, to the earth plug of the instruments power supply clamp.

- use a larger ferrite in the signal and/or the power supply cables.

- make the signal and/or power supply cables the shortest possible.

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