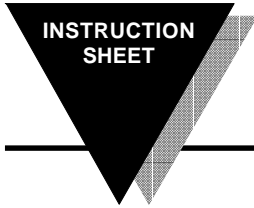


DPM35A Series

Miniature 1/32 DIN Process Indicator



M2768/0497



MINIATURE 1/32 DIN PROCESS INDICATOR

COMPACT INSTRUMENT, 48 x 24 mm (1.89" x .94") BEZEL, REQUIRES A DEPTH OF LESS THAN 80 mm. (3.15") BEHIND THE PANEL, INCLUDING PLUG-IN SCREW-CLAMP CONNECTOR. ALLOWS THE DISPLAY IN ENGINEERING UNITS OF THE PROCESS SIGNAL INPUT : 4...20 mA, 0...10 Vdc, 0...1 Vdc.
THE INSTRUMENT POWER SUPPLY IS ISOLATED FROM THE SIGNAL INPUT.

FRONT VIEW

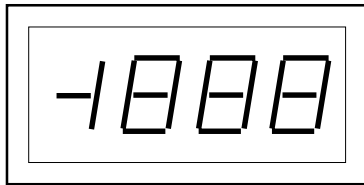


Fig.1

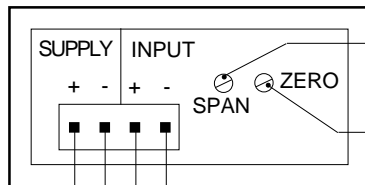


Fig.2

POWER SUPPLY

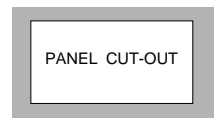
SIGNAL INPUT

SPAN ADJUST
OFFSET ADJUST

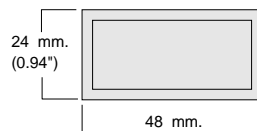
SPECIFICATIONS

DISPLAYS	7 segments, red LED, 3 1/2 digit
POLARITY	automatic, only minus (-)
HEIGHT	10 mm. (0.39")
INPUT CONFIGURATION	bipolar single
RANGES	see table selection
CONVERTER	dual-slope, average value
READ RATE	2.5/sc.
WARM-UP TO RATED ACCURACY	2 min.
ACCURACY at 25 °C	± 0.2 % ± 1 count
SPAN TEMPCO	<50 ppm
ZERO TEMPCO	2 µV/ °C
OVERRANGE POSITIVE	display blanking
OVERRANGE NEGATIVE	only "-1" displayed
DECIMAL POINTS	selectable by solder jumpers
OPERATING TEMPERATURE	-20 to +60 °C (-4 to 140 °F)
STORAGE TEMPERATURE	-40 to 80 °C (-40 to 176 °F)
BURN-IN	24 h.
RECALIBRATION	annual
STANDARD POWER	10 to 30 Vdc, Isolated
START CURRENT	0.2 Amp. (Powered at 24 Vdc)
RIPPLE	10 %
POWER CONSUMPTION	0.6 W max. at 24 VDC.
ISOLATION VOLTAGE	750 Vac.
ELECTRICAL CONNECTION	screw-clamp connector
CASE	DIN 43700
DIMENSIONS	48 mm W x 24 mm H x 70 mm D. (1.89" x 0.94" x 2.76")
PANEL CUT-OUT	45 mm W x 22.2 mm H. (1.772" x 0.874")
WEIGHT	60 g. (2.1 oz.)

MECHANICAL DIMENSIONS, mm (in)

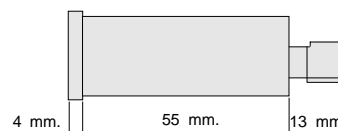


45^{+0.6} mm W x 22.2^{+0.3} mm H
(1.772" x 0.874")



24 mm.
(0.94")

48 mm.
(1.894")



4 mm.
(0.16")

55 mm.
(2.17")

13 mm.
(0.51")

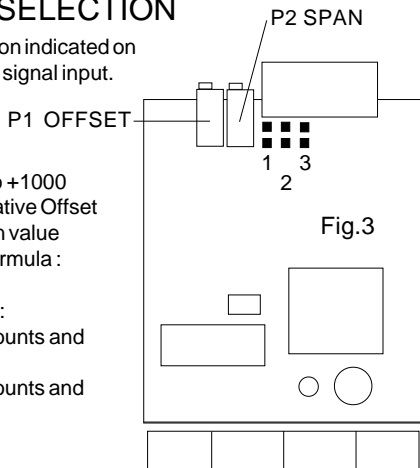


SIGNAL INPUT SELECTION

Place jumper in the position indicated on lower table, in function of signal input.

Offset course : from -1000 to +1000
 To know the maximum negative Offset value, according to the Span value to be displayed apply this formula :
 $((R3/S3) \times S1) - 1000$.

Span course for signal input :
 in Current, minimum 100 counts and maximum 3000 counts
 in Voltage, minimum 100 counts and maximum 2000 counts



Signal Input	Impedance Ω	Close Jumpers
* 0/4...20 mA	182	1 & 2
0/10...50 mA	68	1 & 3
0...2/10 Vdc	200 K	1
0...10/200 Vdc	1 M	None

* Standard signal input for all orders unless specified otherwise.
 Display is adjusted to read 100.0

DECIMAL POINT SELECTION

Display Board Components View

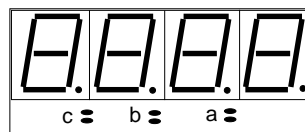


Fig.4

Close Solder Pad	Decimal point position
a	1 XX . X
b	1X . XX
c	1 . XX X

Features a decimal point that can be set independently of signal range.

For instance : 1 Vdc. signal on a ± 2 Vdc meter can be displayed as 1.000, 10.00, 100.0, or 1000 for different engineering units. (in this example 1.000 V 10.00 mA, 100.0% or 1000 mV)

WARRANTY/DISCLAIMER

OMEGA warrants this unit to be free of defects in materials and workmanship and to give satisfactory service for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product. If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. However, this WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current; heat; moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear or which are damaged by misuse are not warranted. These include contact points, fuses and triacs.

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CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used in humans, or misused in any way. OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.



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RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA ENGINEERING Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED.
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

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ADJUSTMENT AND CALIBRATION PROCEDURE

Determine the lowest input (S1); highest input (S2); lowest reading (R1) and highest reading (R2).

$$S3 = S2 - S1$$

$$R3 = R2 - R1$$

- 1.- Select the Signal Input type installing the Jumpers according to Table 2.
- 2.- Connect a calibrator to the signal input terminals.
- 3.- Power up the instrument with the appropriate power supply.
- 4.- Adjust the calibrator until it generates 0 mA. or 0 Vdc.
- 5.- Turn the "ZERO" trimmer (P1) until the display shows "0000".
- 6.- Adjust the calibrator until it generates the S3 value (difference between the highest and lowest signal).
- 7.- Turn the "SPAN" trimmer (P2) until the display shows the R3 value (difference between the highest and lowest reading).

The adjustment procedure is finished, but if the lowest signal is different of 0 then follows with the next point.

- 8.- Adjust the calibrator until it generates the low signal S1. (i.e. 4 mA).
- 9.- Turn the "ZERO" trimmer (P1) until the display shows the lowest reading R1. The reading for lowest signal can be modified as much times as wanted. The value of R3 will not be affected.
- 10.- Close the jumper for the decimal point, according to the required decimals, see table 1.

Example : Signal Input : 4...20 mA; Display Reading : 0...125.0

Determine the value of S3 and R3.

$$S3 = 20-4 = 16 \text{ mA}$$

$$R3 = 1250-0 = 1250$$

- 1.- Close Jumpers 1 & 2.
- 2.- Connect the calibrator and power up the instrument.
- 3.- Adjust the calibrator at 0 mA and turn the trimmer P1 until the display shows "0000"
- 4.- Adjust the calibrator at 16 mA and turn the trimmer P2 until the display shows "1250"
- 5.- Adjust the calibrator at 4 mA and turn the trimmer P1 until the display shows "0000"
- 6.- Close the Solder Pad "a".

GENERAL CONSIDERATIONS

INSTALLATION

PRECAUTIONS. - The installation and the future use of this unit must be done by suitable qualified personnel. The unit has not DC(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 and also the necessary devices to protect the operator and the process when using the unit to control a machine or process where injury to personnel or damage to equipment or process, may occur as a result of failure of the unit.



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 DC (mains) power before such wiring is attempted.



Install the unit in a places with a good ventilation to avoid the excessive heating. And far from electrical noise source or magnetic field generators such as power relays, electrical motors, speed controls etc...

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 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 to circuits which power inductive loads.

WARNING. - The power supply is dc voltage, be careful with the polarity indicated for each terminal.

SIGNAL WIRING. - Certain considerations must be given when install the signal input wires. If the wires are longs can act like an antenna and introduce the electrical noise to the unit, therefore :

Do not install the signal input wires in the same conduit with power lines, heaters, solenoids, SCR controls etc...and always far from these elements.

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.

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.

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.

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



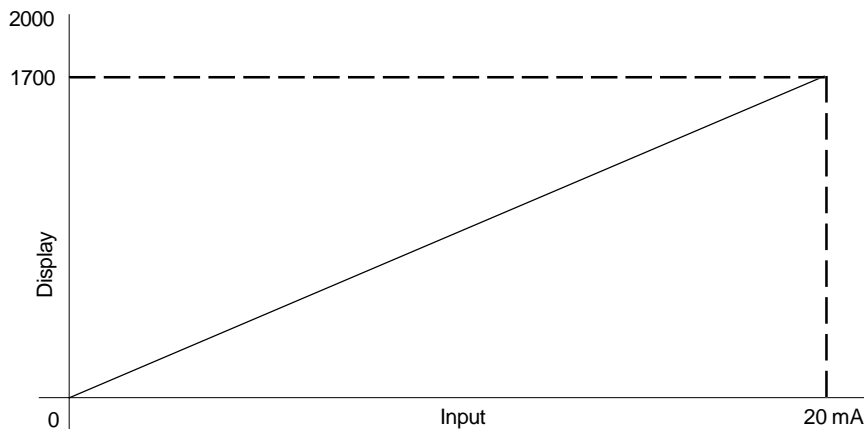
EXAMPLES OF ADJUSTMENT AND CALIBRATION PROCEDURE

Signal Input 0...20 mA
Display Reading 0...1700

Signal Input : Lowest (S1) = 0 mA
Highest (S2) = 20 mA
Reading : Lowest (R1) = 0
Highest (R2) = 1700

$S3 = S2 - S1 = 20 - 0 = 20 \text{ mA}$
 $R3 = R2 - R1 = 1700 - 0 = 1700$

A.- Without offset

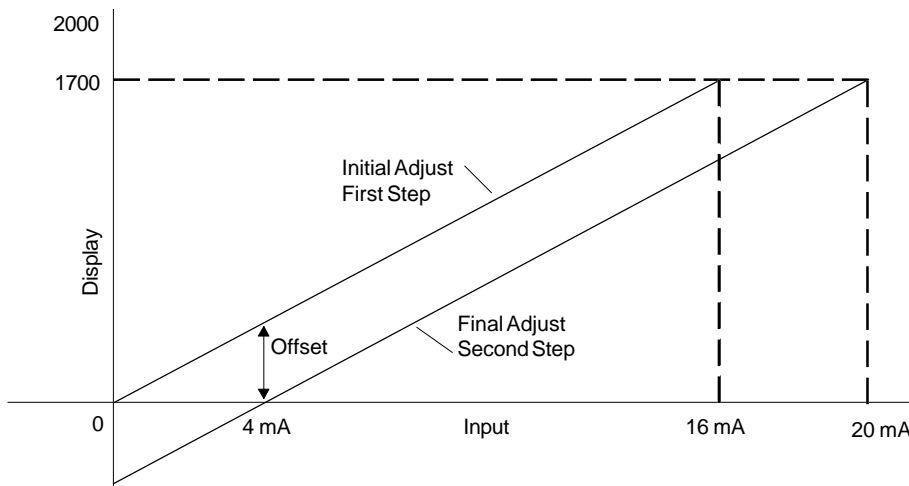


Signal Input 4...20 mA
Display Reading 0...1700

Signal Input : Lowest (S1) = 4 mA
Highest (S2) = 20 mA
Reading : Lowest (R1) = 0
Highest (R2) = 1700

$S3 = S2 - S1 = 20 - 4 = 16 \text{ mA}$
 $R3 = R2 - R1 = 1700 - 0 = 1700$

B.- With Negative Offset



Signal Input 4...20 mA
Display Reading 200...1700

Signal Input : Lowest (S1) = 4 mA
Highest (S2) = 20 mA
Reading : Lowest (R1) = 200
Highest (R2) = 1700

$S3 = S2 - S1 = 20 - 4 = 16 \text{ mA}$
 $R3 = R2 - R1 = 1700 - 200 = 1500$

C.- With Positive Offset

