

DM700/I LOOP POWERED DIGITAL INDICATOR

Designed, manufactured and supported by:



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1.0 DESCRIPTION

The DM700/I is a loop-powered process indicator with a 4-digit 7-segment red LED display. The DM700/I accepts a (4 to 20) mA input signal and displays the associated process variable.

The instrument configuration settings are selectable via a simple to use menu system, which is navigated by the use of three push-button keys located on the rear of the display. This is described over the page in detail.

The entire assembly is sealed into a cap that fits directly onto the SCH4 (plastic) or SCH15 (stainless steel) series of connecting heads. Please refer to the SCH4 and SCH15 datasheet for further information.

ATEX approved version DM700XI is also available for hazardous area use. This unit has the same configuration features, but configuration must only be performed in the safe area.

2.0 RECEIVING AND UNPACKING

Please inspect the packaging and instrument thoroughly for any signs of transit damage. If the instrument has been damaged, please notify your supplier immediately.

3.0 SPECIFICATION @ 20 °C

DM700/I DM700XI	
Input	(4 to 20) mA [Operated (3.8 to 21mA)]
Max input Current	90 mA for 1 minute
Accuracy	± 0.02 % of FSD
Max display range	-1999 to 9999
Stability	Zero 0.002% / °C Span 0.01 % / °C
Overrange	Less than 3.8 mA or greater than 21 mA
Default Range	0.0 to 100.0
Decimal Point	Programmable
Loop Voltage Drop	Less than 4 V @ 20 mA
Display	4 digit 7.6 mm Red LED
Connection	Two way screw terminal block
Ambient Temperature	(-20 to 75) °C, Storage (-50 to 85) °C
ATEX	DM700XI version ATEX II 1G EEx ia IIC T4-T5
EMC	Tested to BS EN 61326
Hart Transparent	Yes
Mechanical	Low profile SCH4 Head ABS, IP67 rating when used with SCH4 base unit Or SCH15 stainless steel base unit.

4.0 INSTALLATION AND WIRING

!!!! IMPORTANT

- The maximum current rating for this device 90 mA for 1 minute. Exceeding this value will destroy the device. Fuse protection of the current loop to which this device is connected is highly recommended.

- This unit must only be series connected into a (4 to 20) mA current loop.
- Ensure the instrument is installed with adequate protection against the environment. IP67 rating must be maintained.
- Try to avoid installing the equipment close to sources of extreme temperature and electrical or electromagnetic interference.

! DM700XI version please read and understand section 7 of this instruction sheet prior to any installation.

4.1 Configuration

Important DM700XI version configuration must only be performed in the safe area prior to installation.

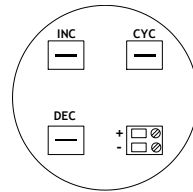
Connect the device to a (4 to 20) mA loop, set at any value between 4 and 20 mA. To configure the device follow the simple configuration menus printed on the reverse side of this sheet. Fit the correct units legend to the front panel face.

4.2 Enclosure

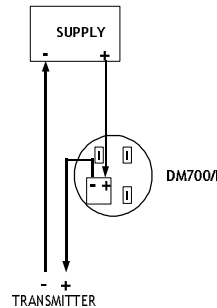
The equipment must be housed in either the SCH4 series of enclosures (DM700X/I only) or any metal enclosure offering protection to IP67. The enclosure must be suitable for the atmosphere and environment in which it is installed.

Please refer to the SCH4 data sheet for further details.
All external cabling/sensor entries must maintain IP67 rating.

4.3 Wiring and switch location (viewed looking at connector)



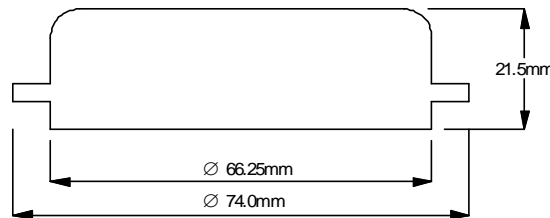
DM700/I (Non Intrinsically safe version)
Typical Wiring



5.0 MAINTENANCE

Apart from configuration this equipment requires no user maintenance. If re-calibration is required please contact your supplier for further information. Any cleaning of the instrument should be carried out using a mild detergent and a soft cloth. No solvents or abrasive cleaner should be used.

6.0 MECHANICAL DETAIL



7.0 DM700XI VERSION - FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES.

7.1 ATEX Certificate

The DM700XI has been issued with an EC-type examination certificate, confirming compliance with the European ATEX directive 94/9/EC for Intrinsic Safety. The unit bears the Community Mark and subject to local codes of practice, may be installed in any of the European Economic Area (EEA) members countries. The equipment must be installed and maintained in accordance with local requirements for electrical equipment for use in potentially explosive atmospheres, eg EN60079-14 & EN60079-17. This instruction sheet describes installation which conforms with BSEN60079-14 & BS EN60079-17. When designing systems outside the UK, the local code of practice should be consulted.

7.2 ATEX Mark

The DM700XI product labels carry the following information.

Front Panel Label Manufacturer Type	Status instruments Ltd DM700XI
CE mark	Explosive protection mark
Approval	II 1G EEx 1a IIC T4 (Tamb = -20°C to +75) °C T5 (Tamb = -20°C to +40) °C
Certification reference	TRL05ATEX21087X Ui = 30V , Ii = 100 mA , Pi = 0.75W , Ci = 0 , Li = 0
Internal Label Serial Number (includes date code) Range Country of manufacture	Made in UK

7.3 Special conditions for safe use

As indicated by the Certificate reference "X" suffix, special conditions apply for safe use. They are as follows:-

When connected to an approved system the DM700XI may be installed in:-
Zone 0 explosive gas air mixture continuously present
Zone 1 explosive gas air mixture likely to occur in normal use
Zone 2 explosive gas air mixture not likely to occur and if it does, it will only occur for a short time.

Be used in gas groups :-

Group A	propane
Group B	ethylene
Group C	hydrogen

Allowable temperature class

T4	(Tamb = -20 °C to +75 °C)
T5	(Tamb = -20 °C to +40 °C)

Environmental protection

The equipment must be housed in either the SCH4 series of enclosure or any metal enclosure offering protection to IP67. The enclosure must be suitable for the atmosphere and environment in which it is installed.

Maintenance

The DM700XI must not be configured in the hazardous area, only in the safe area. The DM700XI contains no user serviceable, adjustable or replacement parts. No attempt should be made to repair the unit. All units must be returned to the manufacturer for repair or replacement. Attempted repair or service may invalidate the explosive protection features of the equipment.

A warning label must be attached next to this equipment, stating:-

Warning Electrostatic Hazard. Do not charge by rubbing or cleaning with solvents.

7.4 Connection

The intrinsically safe output parameters of the (4 to 20) mA loop (which is defined by the Zener barrier or galvanic isolator used) supplying the DM700XI must be less than:

Uo	=	30V dc
Io	=	100mA
Po	=	750 mW

The DM700XI requires an additional 4 volts from the loop to operate correctly.

