

DM3410 TEMPERATURE INPUTS ☒DM3420 PROCESS INPUTS ☒TRANSMITTER EXCITATION ☒IP65 FRONT PANEL SEALING ☒PLUG & PLAY OPTION PODS ☒Modbus RS485 SERIAL COMMS ☒AUTO SCALING MODE ☒

NEW



INDICATORS

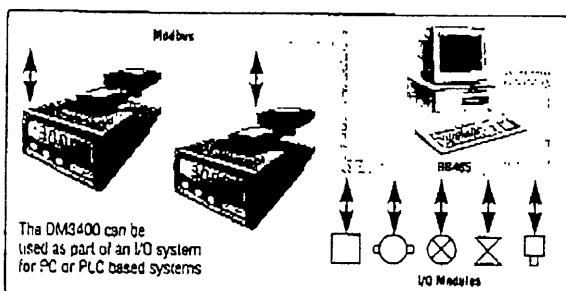
## INTELLIGENT DIGITAL INDICATORS

### DM3400 SERIES

#### INTRODUCTION

The **DM3400** is a series of highly accurate and stable digital indicators. The **DM3410** and **DM3411** are for Temperature indication, and the **DM3420** and **DM3421** for Process.

Designed without compromise, the **DM3400** series uses leading edge technology to accept all commonly used temperature or process inputs. Engineering units are displayed on a high efficiency Red (Green option) LED display that provides daylight readability. The indicators can easily be used 'stand alone' or, using the Modbus serial communications option pod, as part of a larger system.



The display can be set to show a fixed number of decimal places and to auto scale to show the maximum resolution.

The highly innovative case design enables option 'Pods' to be easily installed without the need for dismantling or re-calibration. A range of 'Plug and Play' Pods are available covering:-

Relay outputs  
Isolated 4-20 mA re-transmission  
Modbus RS485 serial comms.

The flexibility of plug-in option pods combined with the switch mode power supply results in reduced stock holdings and, in common with the other products from Status Instruments, a low 'cost of Ownership'.

The front panel is sealed to IP65 and the case has a moulded in rubber gasket enabling it to seal to the panel maintaining the IP65 rating, ideal for installing it in 'dusty' areas or where low pressure jets of water are used to clean down equipment.

Tension clamp\*1 two part connectors are provided for 'fast wiring' enabling installation to be completed in typically half the

time it would take using conventional screw terminals. These high quality connections are manufactured to IEC-947-1 and IEC947-7 standards and maintain the contact permanently under tension to also provide superior long-term performance in the presence of vibration.

\*1 alternative clamping yoke screw terminal connectors are available to special order.

#### SET UP

Programming is via the front panel keys following a logical menu structure which can be set to 'Short' (default), whereby only the common usage features are presented to the operator, or 'Full' where the full range of programmable features is available. Alternatively via a PC by using the RS485 (Pod-3000-05) Modbus communication pod.

#### MENU MODE

Two front panel programming menus can be selected as follows with the option of password protection.

Feature	Short Menu	Full Menu
Temperature Indicators DM3410 DM3411	Sensor type. Resolution.	Sensor type. Resolution. °C/°F. Burnout condition: User offset: Filter time constant.
Process Indicators DM3420 DM3421	Input type. Resolution. lo:hi	Input type Resolution lo:hi Burnout condition Filter time constant
Dual Alarm Relay Pod-3000/02	Alarm type: Setpoint.	Alarm type: Setpoint. Hysteresis: Latch: Invert.
Isolated re-transmission Pod-3000/03	lo : hi.	lo : hi. Output Span.
Modbus Comms Pod-3000/05	Device No: Baud rate: Connections 2/4.	Device No: Baud rate: Connections 2/4.

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38 EN ISO 9001:1994  
Certificate No. 006267

**SPECIFICATION @ 20°C****DM3410 UNIVERSAL TEMPERATURE INDICATOR**

The DM3410 accepts all common thermocouple and RTD types and displays the temperature digitally

**RTD (Pt-100)**

Sensor Range		-200 to +850°C [18-390ohm]
Linearisation	Standard	BS EN 60751 (IEC-751) BS 1904 (DIN43760) JISC 1604
	Custom	[X]*1
Basic measurement accuracy		0.1°C ±0.05% Rdg
Thermal Drift	Zero	0.008°C/°C
	Span	100 ppm/°C
Excitation current		300µA to 550µA
Lead Resistance effect		0.002°C/ohm
Maximum lead resistance		50 ohms/leg

**THERMOCOUPLE**

TYPE	RANGE
Type K	-200 to 1370°C
Type J	-200 to 1200°C
Type T	-210 to 400°C
Type R	-10 to 1760°C
Type S	-10 to 1760°C
Type E	-200 to 1000°C
Type F (L)	-100 to 600°C
Type N	-180 to 1300°C
Custom [X]*1	-999 to 9999

**Basic Measurement Accuracy** ±0.04% FRI ±0.04% Rdg or 0.5°C (whichever is greater)  
FRI = Full Range Input

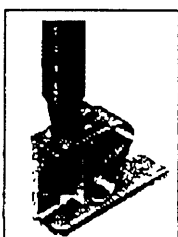
Linearisation	Standard	BS EN 60584-1 (IEC 584-1)
	Custom	[X]*1
Cold Junction Error		±0.5°C
Cold Junction Tracking		0.05°C/°C
Cold Junction Range		-30 to +60°C
Thermal drift	Zero	0.1µV/°C
	Span	100 ppm/°C

Note\*1 Custom characterisation is available pre programmed at the factory at extra cost. Contact your nearest Sales Office.

**Connection Method****Tension Clamp\*2 Two Part**

The tension clamp pulls the conductor firmly against the copper current bar which is coated with a tin lead compound

- zero-maintenance connection
- gas-tight clamping point
- constant contact force
- wire size 0.5 to 1.5 mm<sup>2</sup>

**DM3420 PROCESS INDICATOR**

The DM3420 accepts all common process signals, current or voltage, and displays the signal digitally in engineering units. An internal power supply provides excitation for field transmitters.

**PROCESS**

Voltage	Range	0-1 volts 1-5 volts 0-10 volts
Accuracy		0.05% FS
Thermal Drift	zero	0.1µV/°C
	span	100 ppm/°C
Current	Range	0-20 mA 4-20 mA 0-10 mA
Input Impedance		47 ohm (current) 1 Mohm (voltage)
Accuracy		0.05% FS
Thermal Drift		100 ppm/°C
Excitation		24V ±5% @ 50 mA

**GENERAL SPECIFICATION @ 20°C**

Update time	250 mS maximum
Time constant (Filter off)	<1 second (to 63% of final value)
Filter Factor Programmable:	Off, 2 seconds, 10 seconds or Adaptive
Warm-up time	2 minutes to full accuracy
Display range	-999 to 9999
Power Supply	S1 90-253 V AC 50/60 Hz S2 20-35 V DC
Power Consumption	6VA Max. (options fitted)

**DISPLAY**

4 Digit RED LED standard	14.2mm high / high intensity
4 Digit GREEN LED option	14.2mm high / high intensity
4 Alarm RED LED indicators	2.5mm high numeric

**ENVIRONMENTAL**

Sealing to PANEL	IP65
Ambient operating range	-30 to +60 °C
Ambient storage temperature	-50 to +85 °C
Ambient humidity range	10 to 90% RH non condensing

**APPROVALS**

EMC Emissions	BS EN50081-1
Susceptibility	BS EN50082-2
ELECTRICAL SAFETY	BS EN61010-1 UL pending

**Connection Environmental Approvals**

Low Temperature	IEC 68-2-1
Dry Heat	IEC 512-6-9
Damp Heat	IEC 512-6-3
Damp Heat cyclical	IEC 68-2-30
Salt Spray	IEC 512-6-6
Sulphur Dioxide	IEC 68-2-46
Hydrogen Sulphide	IEC 68-2-16
Gas Tightness	IEC 512-Pr.11n

\*2 alternative clamping yoke screw terminal connections are available to special order.

**OUTPUT OPTIONS****Plug and Play Option Pods**

Simple plug in pre-calibrated units, no dismantling or recalibration

**Pod-3000/02 Dual relay Alarm**

Two independent mains rated relay outputs (common connection)

Contacts	2 x Changeover relays common wiper	
Ratings	AC	DC
Maximum Load	7A@250V	7A@30V
Maximum Power	1750VA	210W
Maximum Switching	253 Volts	125 Volts
Electrical Life	10 <sup>5</sup> operations at rated load	
Mechanical Life	50 million operations	
Termination	standard	5 way tension clamp connector Optional screw terminals

**Pod-3000/03 Isolated re-transmission**

Ranges	0-10mA (Active or Passive) 0-20 mA (Active or Passive) 4-20 mA (Active or Passive)	
Minimum current output	0 mA	
Maximum current output	23 mA	
Accuracy	0.07% F.S.	
Max. Output load	Active	1 K ohm
	Passive	[(Vsupply-2)/20] K ohms
Max. External Supply Voltage	30V (Passive mode)	
Voltage effect	0.2 $\mu$ A/V	
Ripple current	<3 $\mu$ A	
Isolation	500V AC	
Stability	1 $\mu$ A/°C	
Termination	standard	5 way tension clamp connector Optional screw terminals

**COMMUNICATIONS****Pod-3000/05 RS 485 Modbus Comms.**

PC communication for configuration and monitoring.

Physical Layer	4 wire or 2 wire half duplex RS485	
Baud Rate software selectable	19,200 or 9,600	
Protocol	Modbus RTU format	
Isolation	500V AC	
Maximum Fan out	32 units	
Termination	standard	5 way tension clamp connector
	optional	screw terminals
	optional ribbon	cable - RC

**ORDER CODE**

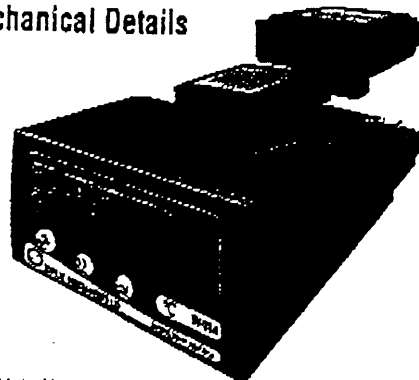
Series DM34

Universal Temperature	1
Universal Process	2

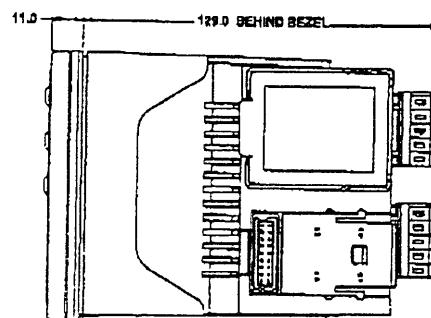
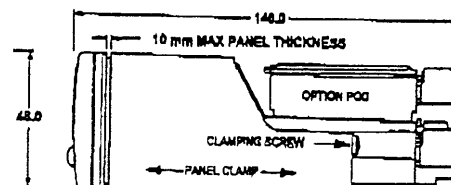
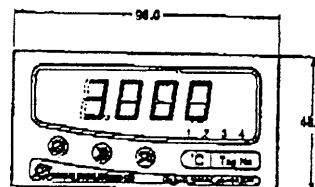
RED LED version	0
GREEN LED version	1

Power supply 90-253V AC 50/60Hz	S1*
Power supply 20-35V DC	82

\*Note - Supplied as standard unless otherwise specified

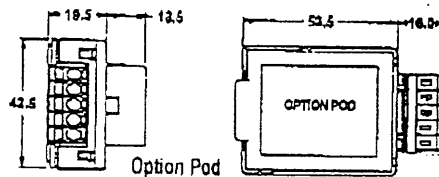
**Mechanical Details**

Main Unit



IP65 seal to panel

Weight 230gms. Panel cut out 92 x 45mm



Option Pod

Material	ABS/PC
Flammability	IEC707 FV0 UL 94V0

Dimensions in mm

**OPTIONS****Pod-3000/02** Dual Relay Output (2 per unit maximum)**Pod-3000/03** Isolated 4-20mA re-transmission  
(1 per unit maximum)**Pod-3000/05** Isolated Modbus RS485 (1 per unit maximum)**Pod 3000/05-RC** Ribbon cable option**ACC001** Pack of 10 5 way optional screw terminals