

INTELLIGENT DIGITAL INDICATORS

DM3400 SERIES

- DM3410 (Pt100, T/C)
- DM3420 (CURRENT, VOLTAGE)
- BUILT IN 24V PSU FOR TRANSMITTER EXCITATION
- IP65 FRONT PANEL SEALING
- PLUG & PLAY POD OPTIONS FOR RELAY / CURRENT
- MODBUS RS485 SERIAL COMMS OPTION
- AUTO ROUNDING MODE



INTRODUCTION

The DM3400 is a series of highly accurate and stable digital indicators. The DM3410 takes inputs directly from Pt100 or Thermocouple sensors for Temperature indication, and the DM3420 current and voltage for Process indication.

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 LED display that provides daylight readability. The indicators can easily be used as 'stand alone' or, alternatively 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 or 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 re-transmission ((0 to 10) mA, (0 to 20) mA, (4 to 20) mA)
- 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 IEC-947-7 standards and maintain the contact permanently under tension to also provide superior long-term performance in the presence of vibration.

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SPECIFICATIONS @ 20 ° C

DM3410 UNIVERSAL TEMP. INDICATOR

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

RTD (Pt100)

Sensor Range	(-200 to 850) °C, (18 to 390) Ω
Linearisation	Standard BS EN 60751 (IEC-751) BS 1904 (DIN 43760), JISC 1604
Basic Measurement Accuracy	0.1 °C ± 0.05 % rdg
Thermal Drift	Zero 0.008 °C/ °C
	Span 0.01 %/ °C
Excitation Current	(300 to 550) μA
Lead Resistance Effect	0.002 °C/ Ω
Maximum Lead Resistance	50 Ω / leg

THERMOCOUPLE (K,J,T,R,S,E,L,N,B)

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)
Cold Junction Error	± 0.5 °C
Cold Junction Tracking	0.05 °C/ °C
Cold Junction Range	(-30 to 60) °C
Thermal Drift	Zero 0.1 μV/ °C
	Span 0.01 %/ °C

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 to 1) V (1 to 5) V (0 to 10) V
Accuracy		0.05 % FS
Thermal Drift	Zero	0.1 μV/ °C
	Span	0.01 %/ °C
Current	Range	(0 to 20) mA (4 to 20) mA (0 to 10) mA
Input Impedance		47 Ω (current) 1 MΩ (voltage)
Accuracy		0.05 % FS
Thermal Drift		0.01 %/ °C
Excitation		24 V ± 5 % @ 50 mA
Linearisation		Linear, Square Root or Custom

GENERAL

Input/Output Isolation		500 VAC rms (Galvanically Isolated)
Update Time		250 ms maximum
Time Constant (Filter off)		< 1 s (to 63 % of final value)
Filter Factor Programmable		Off, 2 s, 10 s or Adaptive
Warm-up Time		120 s to full accuracy
Display Range		-999 to 9999
Power Supply	S1	(90 to 253) VAC, (50 to 60) Hz
	S2	(20 to 35) VDC
Power Consumption		6 VA maximum (options fitted)

DISPLAY

4 Digit RED LED Standard	14.2 mm high/high intensity
4 Alarm RED LED Indicators	2.5 mm high numeric (Only when Relay option is fitted.)

ENVIRONMENTAL

Sealing	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 Approved

OUTPUT OPTIONS

PLUG AND PLAY OPTION PODS

Simple plug in pre-calibrated units, no dismantling or re- calibration.

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	5 A @ 250 V	5 A @ 30 V
Maximum Power	1250 VA	150 W
Maximum Switching	253 V	125 V
Electrical Life	10 ⁵ 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 to 10) mA (Active or Passive)
	(0 to 20) mA (Active or Passive)
	(4 to 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 KΩ
	Passive [(Vsupply-2)/22] KΩ
Max. External Supply Voltage	30 V (Passive mode)
Voltage Effect	0.2 μA/ V
Ripple Current	< 3 μA
Breakdown Isolation	500 VAC
Stability	1 μA/ °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.

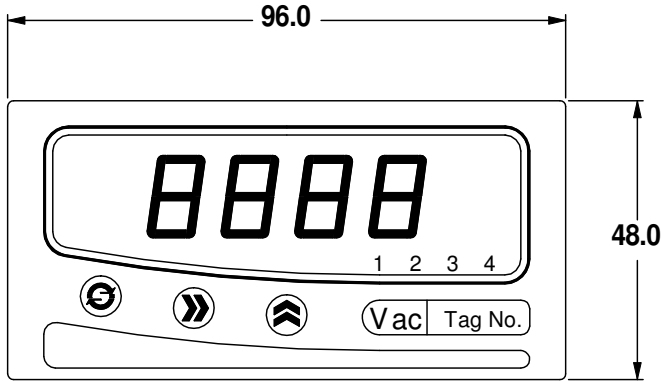
Physical Layer	4 wire or 2 wire half duplex RS485
Baud Rate Software Selectable	19,200 or 9,600
Protocol	Modbus RTU format
Breakdown Isolation	500 VAC
Maximum Fan out	32 units
Termination	Standard 5 way tension clamp connector
	Optional Screw terminals

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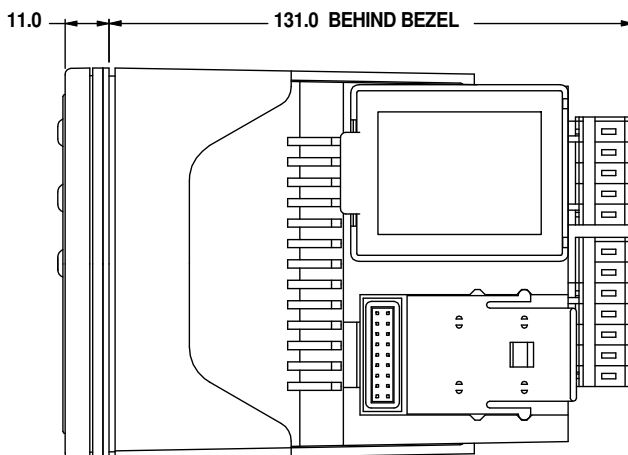
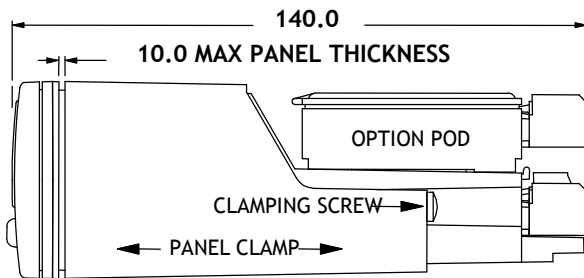
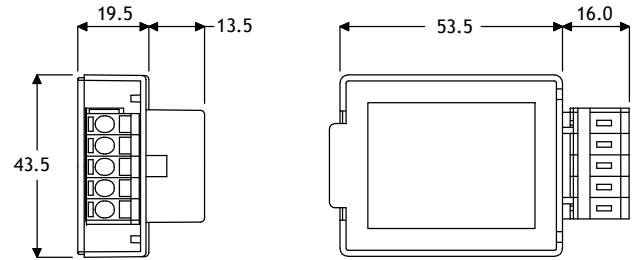
MECHANICAL

Material	ABS/PC
Flammability	IEC707 FV0 UL 94V0
Weight	230 g
Panel cut out	(92 x 45) mm

ALL DIMENSION IN mm



OPTIONAL POD



ORDER CODE

SERIES DM34			/	
Universal Temperature	1			
Universal Process	2			
RED LED DISPLAY	0			
Power Supply (90 to 253) VAC (50 to 60) Hz				S1*
Power Supply (20 to 35) VDC				S2

* Note: Supplied as standard unless otherwise specified

OPTIONS

POD -3000/02	Dual Relay Output (2 per unit max)
POD -3000/03	Isolated (4 to 20) mA re-transmission (1 per unit max)
POD -3000/05	Isolated Modbus RS485 (1 per unit max)