DM3410 TEMPERATURE INPUTS X
DM3420 PROCESS INPUTS X
TRANSMITTER EXCITATION X
NEMA 4 FRONT PANEL SEALING X
PLUG & PLAY OPTION PODS X
Modbus RS485 SERIAL COMMS X
AUTO SCALING MODE X

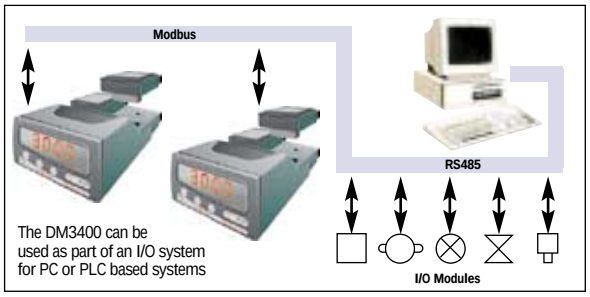
INDICATORS

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 DM3400 can be used as part of an I/O system for PC or PLC based systems

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 inventory and, in common with the other products from Status Instruments, a low 'cost of Ownership'.

The instruments front panel is sealed to NEMA-4. The mounting bezel of the case contains a molded-in rubber gasket. This allows it to be sealed to the panel maintaining the NEMA 4 rating.

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 it can be set up 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 (green LED)	Sensor type. Resolution.	Sensor type. Resolution. °C/°F: Burnout condition: User offset: Filter time constant.
Process Indicators DM3420 DM3421(green LED)	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. Hysterisis: 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.

STATUS INSTRUMENTS INC.
PO Box 548, 456 Park Ave., Scotch Plains, NJ 07076
Phone:(800) 700-3272 Fax: (800) 700-5468 (US & CA only)
Phone: (908) 490-0232
Email: rc@statinst.com Internet Address: www.statinst.com

SPECIFICATION @ 68°F @24V DC

DM3410 UNIVERSAL TEMPERATURE INDICATOR

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

RTD (Pt-100) 2 or 3 wire

Sensor Range		-328 to +1562°F [18-390ohm]
Linearization	**Standard**	BS EN 60751 (IEC-751) BS 1904 (DIN43760) JISC 1604
	Custom	[X]*1 Contact Sales Office
Basic measurement accuracy*2		0.01%FRI*3 ±0.05% Rdg
Thermal Drift	**Zero**	0.008°F/°F
	Span	50 ppm/°F
Excitation current		300µA to 550µA
Maximum lead resistance		50 ohms/leg
Lead Resistance effect		0.004°F/ohm

THERMOCOUPLE

THERMOCOUPLE TYPE	MEASURING RANGE
TC Type **K**	-328 to 2450°F
TC Type **J**	-328 to 2192°F
TC Type **T**	-346 to 752°F
TC Type **R**	-14 to 3200°F
TC Type **S**	-14 to 3200°F
TC Type **E**	-328 to 1832°F
TC Type **F (L)**	-148 to 1112°F
TC Type **N**	-292 to 2372°F
TC Type **[X]***1	±9999

Basic Measurement Accuracy *2		±0.04% FRI*3 ±0.04% Rdg or 1°F (whichever is greater)
Linearization	**Standard**	IEC 584-3 / BS4937
Cold Junction Error		±1°F
Cold Junction Tracking		0.05°F/°F
Cold Junction Range		-40 to +185°F
Thermal drift	**Zero**	0.05µV/°F
	Span	50 ppm/°F

Notes
1. Customer linearization is available pre-programmed at the factory, contact sales office for details
2. Basic Measurement Accuracy includes the effects of calibration, linearization and repeatability.
3. FRI = Full Range Input.

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**	0.05µV/°F
	span	50 ppm/°F
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		50 ppm/°F
Excitation		24V ±5% @ 50 mA

GENERAL SPECIFICATION

Input/Output Isolation		500VAC RMS (galvanically isolated)
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		0.56in high / high intensity
4 Digit GREEN LED option		0.56in high / high intensity
4 Alarm RED LED indicators		0.1in high, numeric

ENVIRONMENTAL

Sealing to PANEL	NEMA.4 IP65
Ambient operating range	-22 to +140 °F
Ambient storage temperature	-58 to +185 °F
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 Listed

Connection Method **Tension Clamp*6 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 1.5mm^2)

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

*6 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		10^5 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		0-10mA (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 µA/V
Ripple current		<3µA
Isolation		500V AC
Stability		0.05µA/°F
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

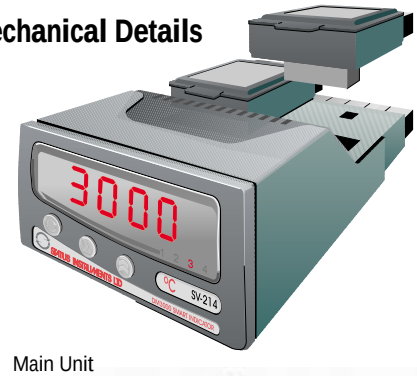
ORDER CODE

Series DM34 [ ] [ ] / [ ]

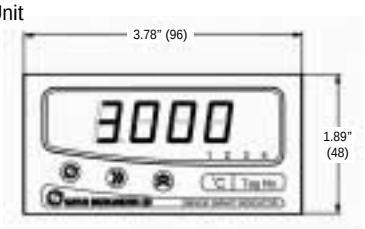
Universal Temperature	**1**
Universal Process	**2**
RED LED version	**0**
GREEN LED version	**1**
Power supply 90-253V AC 50/60Hz	**S1***
Power supply 20-35V DC	**S2**

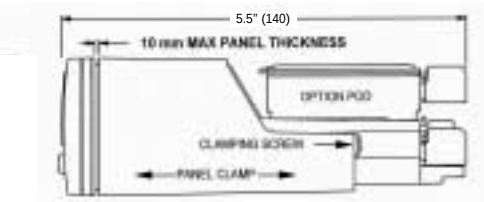
*Note - Supplied as standard unless otherwise specified

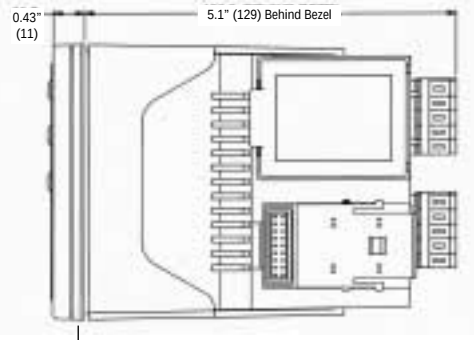
Mechanical Details



Main Unit

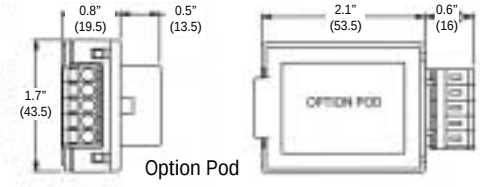






NEMA 4 (IP65) seal to panel

Weight 8ozs (230gms). Panel cut out 3.62" x 1.77" (92 x 45mm)



Option Pod

	Material	ABS/PC
	Flammability	IEC707 FV0
Dimensions in inches (mm)		UL 94VO

OPTIONS

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

ASSOCIATED STATUS PRODUCTS

SEM104 series **LOW COST Temperature Transmitter**.
A low cost in head transmitter for RTD (Pt-100) and T/C sensors providing a two wire 4-20 mA output. The standard factory calibrated settings can be user re-ranged via links and on board Span and Zero potentiometers. A wide selection of probe assemblies can be supplied.

SEM205P 'Smart' Low cost Pt-100 in head Temperature transmitter
The **SEM205P** accepts Pt-100 platinum resistance temperature sensors and converts the output to the 4-20mA industry standard.
They are easily programmed using the software package RCPW running under Windows™ without the need for re-calibration. Communication is via the same pair of wires that carry the 4-20mA output signal, configuration and interrogation can be carried out whilst the transmitter is in an existing loop.
SEM205XP is approved for Hazardous Area use to EEx ia IIC T4..T6 (FM3610)

SEM210 Smart **UNIVERSAL** transmitter
The **SEM210** accepts any commonly used temperature sensor, Slidewire transducer or millivolt signal and converts the output to the 4-20mA industry standard.
The input is galvanically isolated from the loop power supply.
SEM210X is approved for Hazardous Area use to EEx ia IIC T4..T6 (FM3610) also available for ExN IIC use

DIN rail mount, high accuracy (0.05%) and stability is offered with a high packing density.

SEM1000	Analogue Signal Isolators.	**SEM1400**	Loop powered trip amplifiers
SEM1020	Loop Booster.	**SEM1503/1504**	Pt-100 transmitters
SEM1100	Line Powered process isolator	**SEM1500 T/C**	Isolating T/C transmitter
SEM1200	Signal splitter.	**SEM215**	Universal Programmable Transmitter also available to EEx ia IIC T4..T6 (FM3610)
SEM1300	24V DC @ 250mA PSU.		

DM4000 series **SMART** Digital Panel **Indicators**.
These SMART digital indicators are configurable from the front panel or by an optional serial communication link. There are 3 versions: **DM40OOU**, a universal instrument accepting all common process signals, the **DM40OOC**, accepting pulse inputs and displaying RATE or TOTAL and the **DM40OOA** which accepts rate proportional analogue inputs to display RATE and TOTAL.

LOCAL REPRESENTATION

RICHTEC
A RICHTEC PLC GROUP COMPANY
STATUS INSTRUMENTS INC.
PO Box 548, 456 Park Ave., Scotch Plains, NJ 07076
Phone:(800) 700-3272 Fax: (800) 700-5468 (US & CA only)
Phone: (908) 490-0232
Email: rc@statinst.com Internet Address: www.statinst.com