DIGITAL PROCESS MEASUREMENT

Processing your future

CERTIFICATION DEKRA DIN ISO 9001

TECHNOLOGY
TOP · 100

CE

The Model 9004 is a miniature space saving 92 x 92 x 26 mm DIN-rail mount programmable load cell transmitter. Configuration and field calibration is done via a notebook or desktop PC using the user-friendly software available from our web site. Complete 3-way isolation is provided between power supply, input and output.

The transmitter is designed for mV inputs from load cells, strain gauges and strain gauge pressure transmitters. The stable bridge excitation voltage is user selectable for normal or Is (barriered) applications, and can power four load cells with the standard 10V excitation. Sense feedback is included to compensate for cable loss. The precision instrumentation op-amp front end circuit ensures high accuracy & stability. The digital filter feature allows for a stable output in noisy systems. The isolated analogue output is configurable for industry standard 0-10V or 0-20 / 4-20mA signals. The power supply is 95-265V AC/DC as standard. The RS232 serial interface and a remote tare function is standard.

The serial interface allows connections to remote computers and SCADA systems using DPM's DIGIbus protocol. The RS485 option allows up to 99 transmitters to be linked on the same bus.

A feature of this programmable transmitter is the calibration method. Pre-calibrated ranges can be allocated zero and full scale values and these can be adjusted on site via a notebook to allow for dead-weight offset and a single point span calibration (test weight trim).

FEATURES

- ❑ DIN rail mount 92 x 92 x 26 mm enclosure, UL 94 V-0 flame retardant plastic.
- ❑ User selectable excitation for normal or barriered applications.
- ❑ Powers up to 4 load cells as standard with a 10V excitation.
- ❑ 6-wire load cell system (sense feedback included).
- ❑ Fully programmable via a laptop or desktop PC.
- ❑ Suitable for load cell sensitivities up to 3.00 mV/V.
- ❑ Low cost - high performance design.
- ❑ 0-10V, 0-20mA or 4-20mA analogue output with programmable zero & span.
- ❑ Complete 3-way isolation between power supply, input and output.
- ❑ RS232 serial interface standard with DIGIbus protocol
- ❑ Meets European EMC directive 89/336/EEC & Low Voltage directive 73/23/EEC
- ❑ 3 year guarantee

OPTIONS

3001-P	Two set points (solid-state relays)
3002	RS 485 serial interface
3004-P	One set point (solid-state relay)

SPECIFICATIONS

GENERAL

Setup and calibration	Full digital with visual prompting via Smart View software
Memory retention	Full non-volatile operation
Digital filter	Low pass with user selectable values

INPUT AMPLIFIER

Sensitivity adjust	Up to 3.00 mV/V full scale (2.00 mV/V default)
Zero drift	$0.1\mu V$ / °C typically
Span drift	20 ppm / °C typically
Input impedance	20 MΩ
Accuracy & linearity	0.05% of full scale, ± 1 display count
Warm up time	20 minutes
Noise	< 0.5 μV p-p

EXCITATION - Link Selectable

10V	Up to 4 x 350Ω load cells (default for most applications)
10V	Up to 8 x 1000Ω load cells
5V	Up to 8 x 350Ω load cells
5V	For barriered applications up to 2 load cells
3.3V	For barriered applications up to 4 load cells
Load cell connection	6 wire + shields (sense included)

A/D CONVERTER

A/D Type	20 bit sigma delta
Resolution	1 000 000 internal counts
A/D conversion rate	Approximately 5 per second

DIGITAL INPUTS

Digital input on terminal 7	Remote input for tare function

ANALOGUE OUTPUT

Analogue output isolation	1000V input/output/power isolation (3-way)
Analogue output accuracy	0.1% of full scale
Analogue output resolution	12-bits
Analogue output temp. coefficient	20 ppm / °C typically
Current analog output load	500 Ω maximum (current is source, not sink)
Voltage analog output load	10 kΩ minimum

SERIAL INTERFACE OPTIONS

Serial interface	RS-232 standard or RS-485 optional
Baud rates	2400, 4800, 9600 & 19200
Isolation to input	No
Capabilities of Digibus protocol	Full remote control

SET POINT OPTIONS

Solid-state relay rating	400V AC/DC, 0.5A, power factor 1
Form type	Form A (normally open contact)

ENVIRONMENTAL

Operating temperature range	-10 to +50°C
Service temperature range	-15 to +60°C
Storage temperature range	-40 to +80°C
Humidity	< 85% non-condensing

MECHANICAL SPECIFICATIONS

Dimensions	DIN rail mount 92 x 92 x 26 mm enclosure, IP40 rating
Protection	Industrial strength, UL 94 V-0 flame retardant ABS plastic

POWER SUPPLY OPTIONS

Switching power supply	Yes, 95V - 265V AC/DC isolated supply, 10VA typical

REGULATORY COMPLIANCE

Regulatory requirements	Complies with EC Directives 89/336/EEC & 73/23/EEC

ORDERING EXAMPLE

Option modules (see front page)

MODEL 9004 - 3001P

"Programmable load cell transmitter with dual alarm option"

PROGRAMMABLE SETTINGS
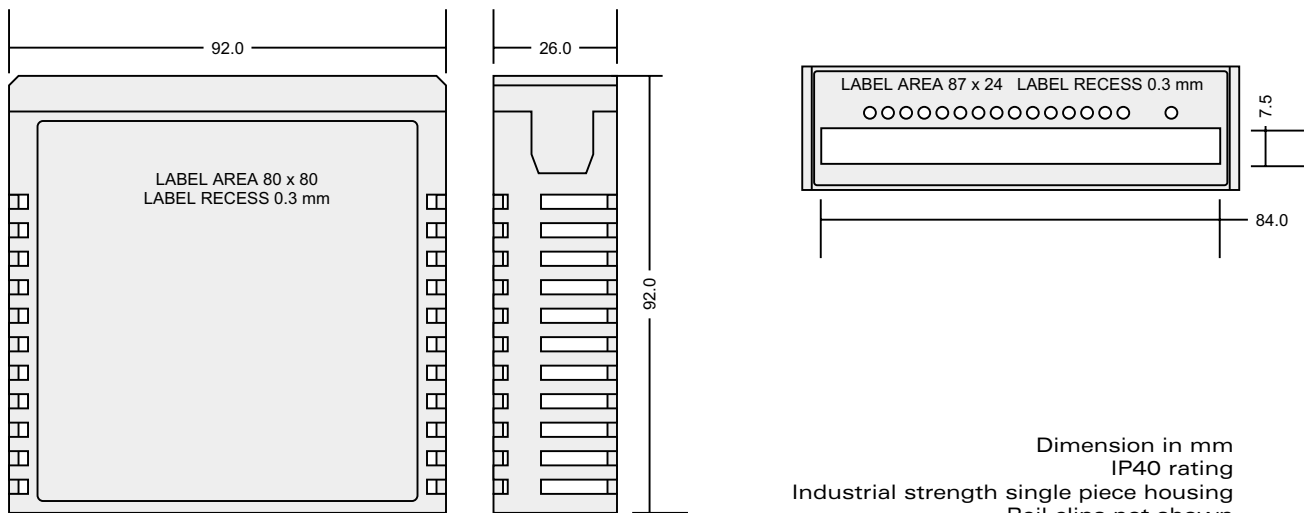
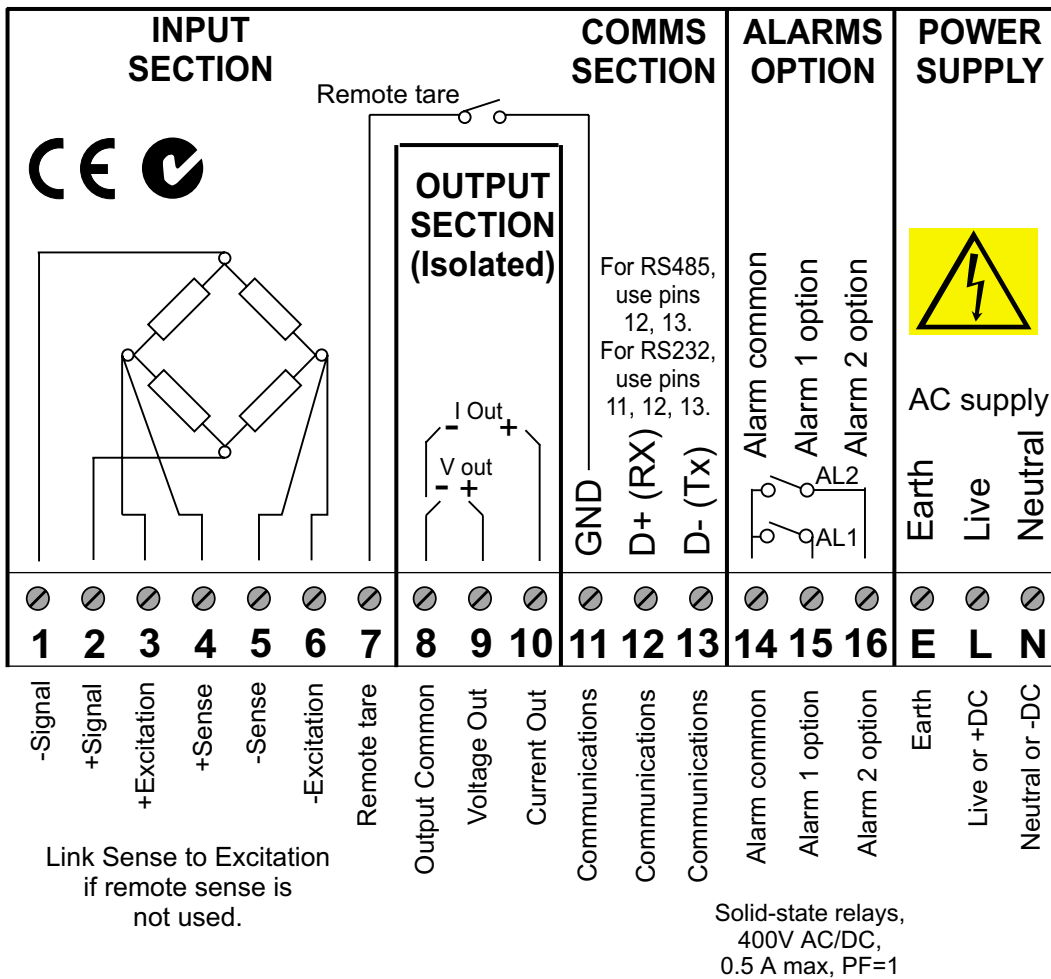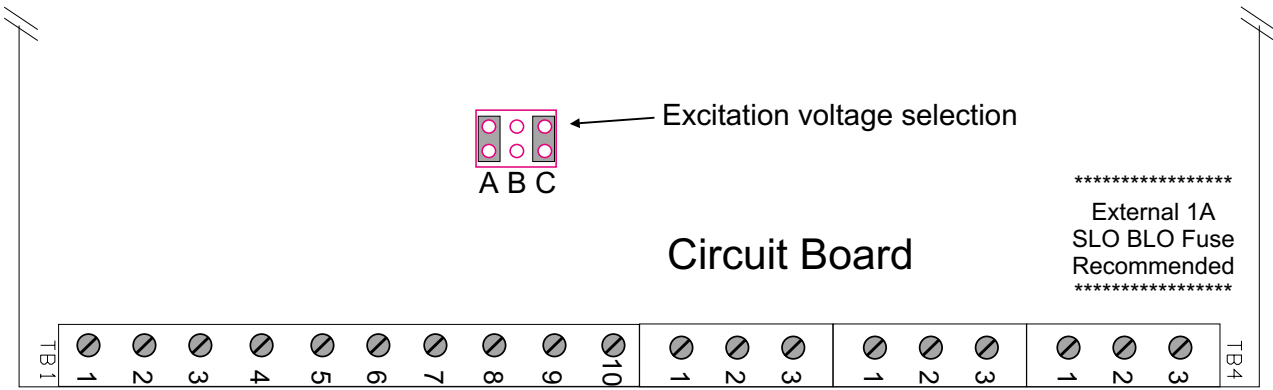The following ranges can be set with the SmartView software, available from our web-site.

LOAD CELL INPUT
Load cell sensitivity	: 0.00 to 3.00 mV/V
Zero & span setting	: -1999 to 20000
Decimal point	: On all digits
Digital filter	: 0, 1, 2 or 4 secs

SERIAL INTERFACE
Bus address	: 0 to 99
Baud rate	: 2400, 4800, 9600, 19k2

ANALOG OUTPUT
Output type	: 0-20mA/4-20mA/0-10V
Zero & span setting	: -1999 to 20000

OPTIONS
Alarm values	: -1999 to 20000
Alarm hysteresis	: 0 to 255 (default 1)
Alarm delay	: 0 to 255 seconds (default 0)
Alarm relay settings	: Selectable HI or LO alarm
Alarm relay state	: Selectable NO or NC

HOUSING DIMENSIONS

92.0

26.0

LABEL AREA 80 x 80
LABEL RECESS 0.3 mm

92.0

LABEL AREA 87 x 24   LABEL RECESS 0.3 mm

7.5

84.0

Dimension in mm
IP40 rating
Industrial strength single piece housing
Rail clips not shown

Excitation voltage selection

A B C

Circuit Board

****
External 1A
SLO BLO Fuse
Recommended
****

TB1 1 2 3 4 5 6 7 8 9 10   1 2 3   1 2 3   1 2 3 TB4

INPUT SECTION	COMMS SECTION	ALARMS OPTION	POWER SUPPLY

Remote tare

OUTPUT SECTION (Isolated)

CE

- I Out +
- V out +

For RS485, use pins 12, 13.
For RS232, use pins 11, 12, 13.

GND
D+ (RX)
D- (Tx)

Alarm common
Alarm 1 option
Alarm 2 option

AL2
AL1

AC supply

Earth
Live
Neutral

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	E	L	N
-Signal	+Signal	+Excitation	+Sense	-Sense	-Excitation	Remote tare	Output Common	Voltage Out	Current Out	Communications	Communications	Communications	Alarm common	Alarm 1 option	Alarm 2 option	Earth	Live or +DC	Neutral or -DC

Link Sense to Excitation
if remote sense is
not used.

Solid-state relays,
400V AC/DC,
0.5 A max, PF=1

Interposing relays recommended
for heavy duty applications

GUARANTEE

This product is guaranteed against faulty workmanship or defective material, for a period of 3 (three) years from date of delivery by DPM.

DPM undertakes to replace without charge all defective equipment which is returned to it (transportation costs prepaid) during the period of guarantee, provided there is no evidence that the equipment has been abused or mishandled in any way.

DPM reserves the right to alter any specification without notice.

e-mail : info@dpm.co.za
Web: www.dpm.co.za

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DEKRA
DIN ISO 9001

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