

SMW Surface Mount Intelligent Load Cell Amplifier

Issue - Sept 2003

Features

- Large LCD display
- Variable gain load cell sensitivity from 0.5 to 200mV/V
- Simple one pass Auto Calibration
- Gross, Net, Tare and Print function keys
- 4-20mA and 0-10V outputs
- 10 V @ 160mA excitation for up to 6/ 350ohm load cells
- High accuracy
- Low drift
- Wide range of power supplies
- IP65 surface mounting case
- Isolated analogue outputs
- 10 years data retention
- Digital programming, calibration & display

Introduction

The SMW intelligent load cell amplifier offers both 4 to 20mA and 0 to 10 volt analogue out-puts, from any standard load cell input.

Ease of calibration and setting of the analogue output range, make the unit extremely user friendly; being set up from the front panel keypad.



'Plugin' output options include

relaysetpointmodule

Programmed in engineering units, with In Flight compensation and Hysteresis
Set-tings available for control or alarm purposes.

communicationsmodules

To read any value, change set points or any other parameter via:

20mA Current loop
RS485
RS232

printermodule

Activated by a function key will allow a printer, if connected to display the current live value, with header message, engineering units, auto incrementing batch number and a real time /date signature if required.

powersupplyoptions

220 - 240V AC
9 - 32V DC

others

Remote display module
LCD display back lighting
DIN rail mounting for the CPU
Programmable function key disabling

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Specifications & order codes

The SMW Intelligent Load Cell Amplifier

The Surface Mounting load cell amplifier is housed in a light grey ABS case, sealed to IP65 with external dimensions of 200 x 120 x 75mm

The unit comprises a surface mounted 12.7mm LCD display on an intelligent base unit with user configurable 4-20mA and 0-10V analogue outputs, with plug in module positions for the power supply, relay and communications options. A facility is available to alter the default display, for Gross or Net values.

The power supply is a selectable 110/120 or 220/240V AC.

Connections for input, output and power supply are through cable glands sealed to IP65.

Internal 2.5mm screw field terminals are provided.

The unit offers:

Calibration

A simple input Auto Calibration is achieved by entering the values of the lowest and highest weights used. Analogue output is precalibrated and can be ranged over any part of the displayed range.

Both input and output are calibrated via the front panel keypad.

Gross, Net and Tare are activated by front panel function keys. Peak Hold is actioned by volt free contacts.

Load Cell Input

The input is of the load cell/strain gauge type.

A transducer excitation voltage of 9.6 volts @ 160mA

Compensation by +/- sense wires for cable connection, voltage drops and any variation in the 10 volt supply.

Load cell sensitivity is preset via DIL switches to 0.5, 0.8, 1.0, 1.25, 1.5, 2.0, 2.5, 3.5, 5, 10, 20, 50, 100 or 200mV/V.

Initial offset is no greater than +/- 0.15mV (15uV/V) which is cancelled during auto calibration.

Speed is 10 readings per second with a digital filter to reduce speed.

Accuracy is 90 days +/- 0.08% of reading, +/- 0.05% FSD being typical

Drift is 0.002% per degree C @ 2.5mV/V typical

Resolution 15 bit/ 4.5 digits.

Contact inputs are available for tare, print and peak hold reset and are volt free.

Analogue Outputs

The analogue outputs are isolated, 4-20mA up to 1Kohm and 0-10 volts up to 2mA.

Accuracy 4-20mA + 0.15% of range, typical.

Resolution as for display up to 13 bits/4.5 digits. Settling time 0.25 secs to 1% of step change.

Isolation ±130V RMS or DC max to analogue input or any other port

Data retention is 10 years for set up values, with a minimum of 10,000 write cycles.

Protection of data and functions is via watchdog timer giving repeat auto resets, impending power failure detection and shut down, low power detection and hold off.

Environmental conditions are as follows:

Storage temperature -20 to + 70 degrees C

Operating temperature -10 to + 50 degrees C

Relative humidity 95% max non condensing

Product standard To IEC 1010-1

Options available are:

2 Set Points Output through 5A, 240V AC SPCO relays, with a latching option

Communications Port For data transfer or print via :-

20mA loop Enabling up to 254 LCA15s to be multidropped to 1 x RS232 via IF25 interface(s)

RS485 Enabling up to 25 units to be multidropped.

RS232 For 1 to 1 connection and standard printer drive.

Printer Operation By front panel function key.

Baud Rates 300, 600, 1200, 2400, 4800, 9600 (19200 Fast Format only)

Back lighting For the LCD display

DIN Rail mounting For the CPU, PSU and output option modules

DC Powering 9-32V DC

Remote Mounting Display module, for panel mounting

In the interests of continued product development, we reserve the right to alter product specifications without prior notice.



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