Model 660 Programmable Weight Indicator

- **Four base models, 660, 661, 662 & 665, with a wealth of display, keyboard and I/o options**
- **A weighing indicator and powerful programmable controller in one unit**
- **Built-in macro programming language or optional 'C' compiler**
- **PROBATCH 660 program for complex batching applications**
- **European legal-for-trade approval**
- **One indicator can handle up to eight scales**
- **Expandable plant interface - up to 128 inputs or outputs**
- **Four serial ports with optional RS485**
- **Up to eight analogue outputs**
- **Modbus™ RTU for easy system integration with PLCs and DCSs**

Model 660 and 661 indicator

The 660 family

The 660 family offers precision weighing plus programmability. Programs, written either in the 660s own macro language or using the optional 'C' compiler, can create powerful data capture or process control systems.

Model 660, 661 and 665

These units employ bright vacuum fluorescent displays. The 660 has a high visibility 20 mm weight display with a smaller two line x five character alphanumeric display for operator prompts etc. The 661 has a four line x 20 character alphanumeric display for both weight data and prompts. The 665 has a large character (19 mm) display for weight plus a four line x 20 character display for prompts.

Model 662 and 665 LCD

Both these instruments employ backlit LCD displays. The 662 has an eight line x 40 character display for weight and operator prompts. The LCD displays support three different font sizes.

Model 662 and 665 indicator

Unlimited applications

All of the 660 family share the same data handling and control functions. Whether the application is batching and dosing, intelligent weighbridges or factory floor data capture, the 660 can be configured to create a powerful and cost-effective solution. This allows a single instrument family to be used across a wide range of requirements with consequential savings in operator training, maintenance and inventory.

By adding the modular I/O units, a 660 can perform sequence control and interlocking - with weighing and PLC functionality in a single unit. The on-board serial ports can be used to connect barcode readers, printers and other peripherals. The optional Modbus™ interface allows 660s to be networked and to communicate, eg with a PC or other device to provide an integrated weighing and control system.

Programming the 660 family

Two types of programming are supported. The 660s simple macro language makes creating applications straightforward for technicians without specialist programming skills. The optional 'C' compiler is shipped with a library of functions allowing simple development and debugging.

TECHNICAL SPECIFICATION

Weighing Performance

Resolution	1000,000d (±5000,000 internal)
A/D conversion	60 Hz
Calibration	Selectable, 5 point linearisation or enter load cell mV/V F.S.
A/D filtering	GSE FIR (Finite Input Response) filter with selectable display rate update
Units of measure	Programmable, user defined
Zero Adjustment	Selectable, 0.01 - 100% F.S.
Span adjustment	0.1 - 20 mV/V
Non-linearity	0.005% FS, L.C. dependent
Operating temperature	-10°C - +40°C
Excitation power	14 - 350 ohm bridges
Input signal connections	4 or 6 conductors with sense leads
Excitation current	400 mA, short circuit protected
Excitation voltage	10 VDC, short circuit protected
Time/date clock	Real-time clock

Electrical

Power input	AC - 90 - 250 VAC @ 50/60 Hz, DC - 10 - 32 VDC
Fuse	0.8 A Slo-Blow

Setpoint I/O

Control I/O

Number of I/O	128 combination, input and output via opto isolated solid state relays
I/O scan rate	16 ms maximum
I/O timer resolution	10 ms

Process I/O

Number of I/O	8
PDIO frequency	8 Hz - 100 KHz
PDIO voltage	5 VDC TTL
Program timer res.	2 ms up/down
Counter input frequency	PDIO 8 Hz - 100 KHz

Communications

Port 1	RS232 full duplex or RS485 multi-drop optional or 20 mA current loop
Port 2 and 3	RS232 full duplex
Port 4	RS232 full duplex not available on 661 or 665 VFD
Protocols	Modbus™, DeviceNet, Profibus pending
Baud rates	15 - 115K bps

Options & Accessories

Note:	**660, 661, 662** - 2 serial bus module (SBM) and 1 communication module (COM) mount internal to the enclosure **665** - 2 serial bus module (SBM) and 1 communication module (COM) mount on the PCB board and upto 4 SBM modules can be mounted internal to the enclosure
Multi-scale module(SBM)	allows for simultaneous monitoring of an additional signal input
Analog output module (SBM)	isolated 16 bit signal output, 0-10 VDC, 0-20 mA or 4-20 mA, software adj. zero/gain (2 analog modules max) active only
I/O relay module (SBM)	8 variations of Quad I/O boards. (AC & DC - 4 output, 4 input or 2 in/2 out)
Output voltage rating	20 - 240 VAC @ 1 A 30 - 60 VAC @ 2 A
Input voltage rating	60 - 135 VAC 200 - 250 VAC 3 - 30 VDC
RS485 module(COM)	isolated serial communication module replaces RS232 on port 1, multi-drop with 251 devices max, half or full duplex up to 4000 feet, 56K bps max
20 mA current loop(COM)	isolated serial communication module replaces RS232 on port 1, TX active or passive, RX passive, 9600 bps max, 12 VDC, 1000 foot loop
Alpha keyboard	allows alpha character entry into data registers such as product name, part number, etc
Dura-shield	0.020" layer of weatherable film lexan with adhesive backing, applied to the front of the indicator, keeps display and keypad clean in extreme environments
Reflash software	download firmware enhancements via RS232 port
BDM flash software	download firmware enhancements via BDM port
User C development kit	write, compile, emulate in 'C'

Enclosures & Displays

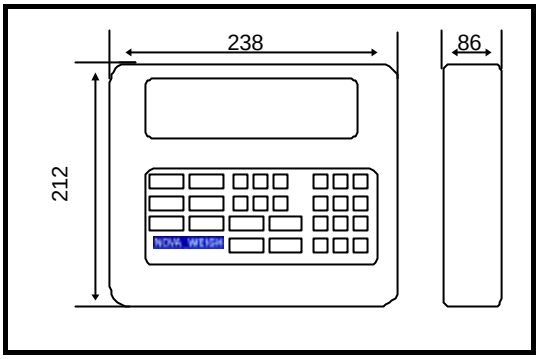
Enclosures

660, 661, 662 & 665	all models, 304 stainless steel NEMA 4X (IP66) design

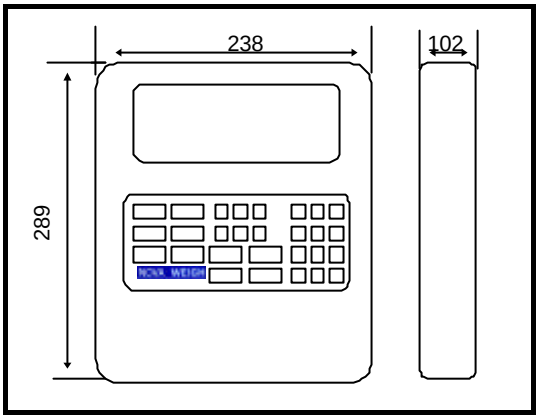
Displays

660	VFD, 6 digit 19 mm with 2 x 5 matrix
661	VFD, 4 x 20, 8 mm
662	LCD, 8 x 40 back-lit, 3 font sizes
665	VFD, 6 digit 19 mm w/ 2 x 5 and 4 x 20 8 mm LCD, 16 x 40 back-lit, 3 font sizes

DIMENSIONS (mm)



Model 660, 661 & 662 indicator



Model 665 indicator

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BS EN ISO 9001:2000 Cert No: FM 11445

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