



Digital Weight Control Module

KD4Series

The KD4 Series is a high performance, multi-featured digital controller. It is designed as a companion instrument for load cells, force transducers, torque transducers, pressure transducers and weighing systems.



The KD Series is a high performance, multi-featured digital controller designed as a companion instrument for load cells, force transducers, torque transducers and weighing systems. Two calibration options are available: Digital (keypad entry), or analog (reference signal). RS232/422/485 serial interfaces are supported. MODBUS® RTU protocol is standard and Ethernet TCP is an available option. A high resolution, 16-bit D/A analog output is also standard with ± 5 VDC, ± 10 VDC or 4-20 mA user selectable formats. The digital I/O consist of two optically-isolated logic inputs and two optically-isolated logic outputs. Remote sensing is supported, which is particularly beneficial where long cable runs or Intrinsic Safety barriers are employed. The KD series operates on 18-28 VDC and provides 5 VDC excitation to the transducers. The durable ABS enclosure is a DIN rail mount configuration, and is rated IP20. The KD Series family of products include AC to DC power supplies, Network Gateway Controllers and Analog Transmitters. ProfiBus and DeviceNet communications protocols are available. Optional Innovation® is an MS Windows-based software, providing an intuitive and convenient format for PC Setup/Control/Networking. The attributes of the KD Series are ideal for measurements in the laboratory, manufacturing, process applications, weighing situations, and for general measurement and control.



APPLICATIONS

- Process Control
- Weighing Applications
- I.S. Hazardous Areas
- Laboratory Measurements
- Force, Torque or Pressure
- O.E.M. Requirements

FEATURES

- 24-Bit A/D
- Analog or Digital Calibration
- Hi-Res 16-Bit Analog Output
- MODBUS® RTU Over RS 485
- Profibus/DeviceNet
- RS 232 & 422/485 Interfaces
- 10 Point Linearization
- 0.01% Accuracy Class
- Peak Hold
- Four Digital I/O

For more information call **1-888-545-8988**

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OPERATOR INTERFACE

Display:	LED; 6 Digit; Numeric; 7-Segment Digits; .55" High; Red
Status Annunciation:	4 (LED); Red; Indicate "SP1", "SP2", "NET", "Center of Zero"
Keypad:	4-Key; Tactile Feedback; Multi-function
Display Resolution:	60,000 dd (max.)
Display Increments:	1, 2, or 5; Selectable
Decimal Point:	0.0, 0.00, 0.000; Selectable
Digital Filter:	Keypad Programmable; .1 to 25 Hz
Zero Tracking:	0, 1, 2, 3 or 4 digits; Selectable
Motion Detection:	0, 1, 2, 3 or 4 digits; Selectable
Operating Modes:	Net, Gross, Peak Hold, Mode 1, Mode 2
Calibration Method:	Digital; Keypad; Enter/Store Zero and span value; PC

FUNCTION

Linearity:	Better Than Or Equal To 0.01% Full Scale (FS)
Internal Resolution:	24-Bit A/D; >16,000,000 Graduations
Measurement Rate:	50 Updates Per Second
Signal Sensitivity:	.02 mV/Graduation
Span Range @ Full Scale:	-3.9 mV/V to +3.9 mV/V
Excitation Voltage:	5 VDC (Nominal); Short circuit protected
Current Rating:	60 mA (Nominal); Up To 6 Summed 350 W Bridges
Power:	24 VDC \pm 15%; 5 Watts
Warranty:	1 Year; Limited

ANALOG OUTPUT

Type:	16-Bit D/A; > 65,000 Graduations
Output Formats:	Voltage: \pm 5 or \pm 10 VDC (10Kohm min load); Current: 0-20 or 4-20 mADC (300 Ohm max load)
Software Selectable Parameters:	Output format; Full Scale and Zero Offset Values; Net, Gross, Peak or Test Modes

COMMUNICATION

Serial Port Interface:	RS232C or RS422/RS485
Standard Baud Rates:	2400, 9600, 19,200 38,400 or 115,200 Baud; Full Duplex; Selectable (RS232)
Standard Protocols:	ASCII; MODBUS® RTU, Continuous, Demand, Slave (Port 2)
Addresses:	Up to 32
Recommended Cable Lengths:	RS-232 is 50 ft. (max); RS-422 & RS-485 is 3200 ft (max)/I/O
Fieldbus Protocol:	Profibus/DeviceNet

I/O

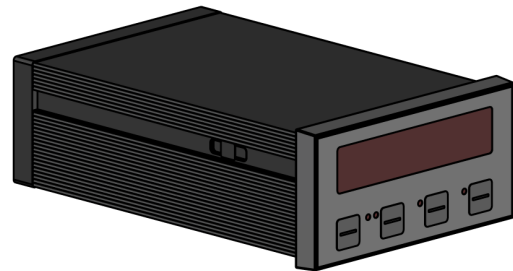
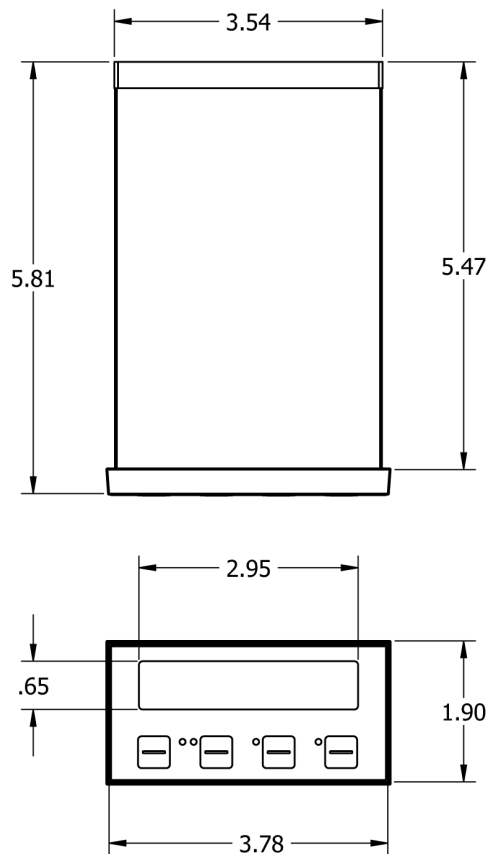
Logic Inputs:	Two; Opto-Isolated; 24 VDC PNP (requires external power source)
Logic Outputs:	Two; Opto-Relays; (maximum load 24 VDC/100 mADC each)

ENVIRONMENTAL

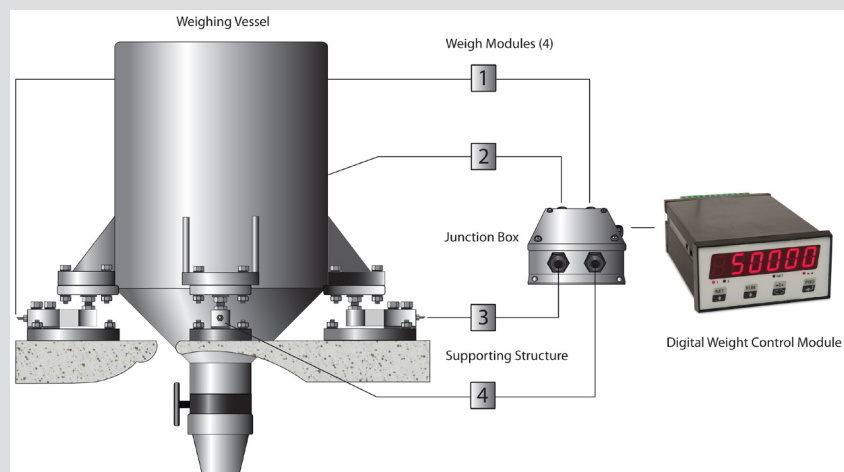
Operating Temperature Range:	-10° To +50° C / 14 To 122°F
Storage Temperature Range:	-20° To +70° C / -4° To 158° F
Humidity Range:	0 To 85% RH; Non-condensing
Temperature Effect on Output:	<.0005% FS/°F (<.001% FS/°C)
Regulatory Compliance:	EN 61326-1, EN55011 and EN55014 for EMC; EN61010-1 for Electrical Security

ENCLOSURES

Enclosure Construction:	DIN Rail Mount; NORYL Auto-extinguishing; IP20
Enclosure Dimensions:	KD4: 3.78" wide X 1.89" high X 4.07" deep
Wiring Connections:	Screw Terminal Blocks; Pitch of 0.196"
Weight:	8 Ounces



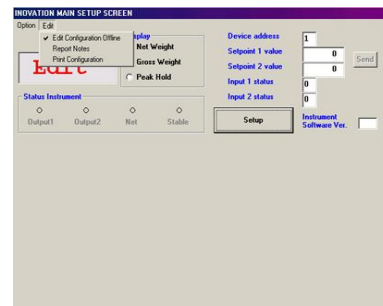
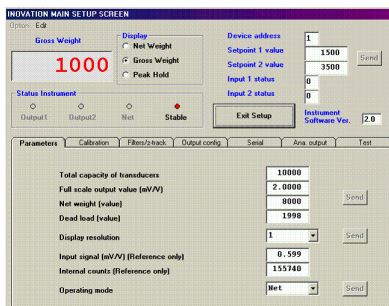
Typical Weighing System



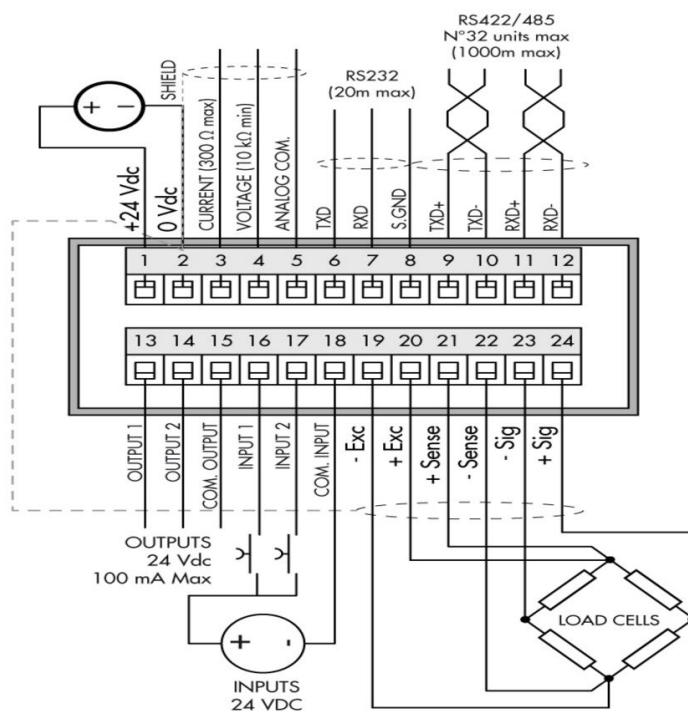


CONFIGURATION USING Innovation™ SOFTWARE

The KD Series can be configured by using the front panel keys to navigate through a series of menus, or by sending configuration and calibration data via the RS-232 port with Innovation an MS Windows based program provided for the KD Series on request. Innovation simplifies the configuration and calibration procedure and facilitates easy networking of up to (48) units.

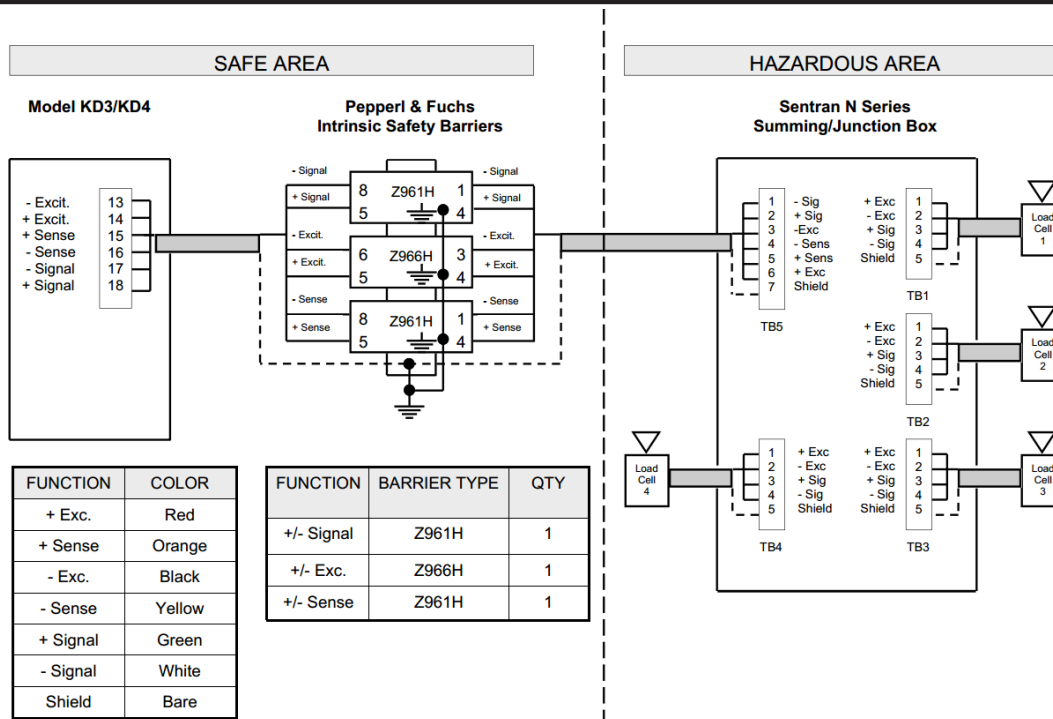


CONNECTIONS DIAGRAM





HAZARDOUS AREA SCHEMATIC



APPLICATION INFORMATION: REMOTE SENSING (6-WIRE) COMPENSATION

Load cell output sensitivity will be affected by the addition or subtraction of resistance as measured at the end of the factory supplied cable and/or connector. Changes in this measured resistance most often occurs as the result of adding or subtracting cable length. Another common cause is the introduction of intrinsic safety barriers or similar resistive influences. Connection junctions introduced to the measurement circuit can introduce unwanted resistance, so take care in making these connections secure and clean.

- Resistance changes of 0.37% per 10 feet of 28 gauge cable can be expected.
- Resistance changes of 0.09% per 10 feet of 22 gauge cable can be expected.

The affects of these resistance changes can be virtually eliminated with the use of the Remote Sensing feature (6-wire) found in many better measurement amplifiers/indicators, such as the KD Series.

Legal Disclaimer



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