Explosive Environment Equipment Policy

∆*Caution!* *The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation or service of these products can result in loss of equipment or serious injury.*

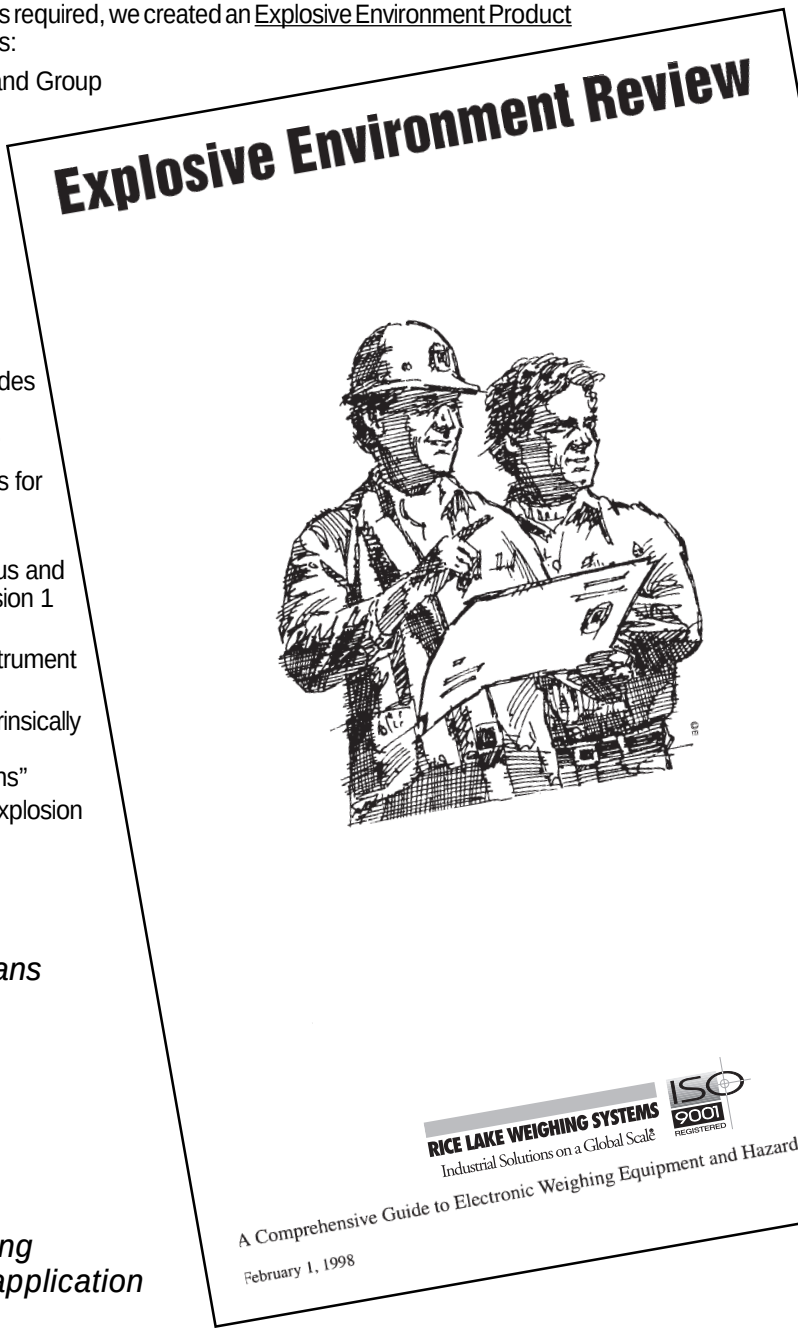
Rice Lake Weighing Systems has assembled the very best in Intrinsically Safe and Explosion Proof equipment. In order to properly specify, install and service this equipment, it is necessary that our distributors understand and appreciate the possible risks involved.

In an effort to educate our customers on some of the precautions required, we created an Explosive Environment Product Review. Available upon request, this 81-page booklet reviews:

- Explosive environment designations: Class, Division and Group
- Standards and Codes applicable to hazardous environment equipment
- Equipment liability
- Theory of Intrinsically Safe, Explosion Proof, and Purged systems
- Equipment specification guidelines
- Proper installation procedures
- Service precautions

The Explosive Environment Product Review booklet also includes resource information on:

- NFPA 70, "National Electrical Code (NEC) Handbook"
- NFPA 496, "Classification of Gases, Vapors and Dusts for Electrical Equipment in Hazardous (Classified) Locations"
- ANSI/UL 913, "Standard for Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II and III, Division 1 Hazardous Locations"
- ANSI/ISA RP 12.6, "Installation of Intrinsically Safe Instrument Systems for Hazardous (Classified) Locations"
- FM Approval Standard 3610, "Approval Standard, Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II and III, Division 1 Hazardous Locations"
- FM Approval Standard 3615, "Approval Standards, Explosion Proof Electrical Equipment"
- "Electrical Installations in Hazardous Locations"



Plant Safety Engineers and Certified Electricians should always be involved in the specification and installation of any Explosive Environment Equipment.

Please see next page for assistance in selecting Hazardous Area Control Equipment for your application requirements

(Specifications on back)

RICE LAKE WEIGHING SYSTEMS
Industrial Solutions on a Global Scale®

Hazardous Area Classification

For assistance in selecting Hazardous Area Control Equipment for your application requirements, please complete this form and submit, along with a description of the application, to:

Rice Lake Weighing Systems
Attn: Hazardous Environment
230 West Coleman Street
Rice Lake, WI 54868
Telephone: 715-234-9171
Fax: 715-234-6967

RLWS File #: _____ Date: _____ Sales Order #: _____ Checked By: _____ Equipment PN#(s) & Serial Number(s): _____ Factory Mutual Not Applicable _____ (International Orders Only)	For RLWS Office Use Only

RLWS CUSTOMER INFORMATION:

RLWS Customer Name: _____ Customer Number: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: (_____) _____ Fax: (_____) _____

Contact Name: _____
(Printed name) (Signature) (Date)

Authorized Signature: _____
(Printed name) (Signature) (Date)

END USER INFORMATION:

End User Company Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Telephone: (_____) _____ Fax: (_____) _____

Contact Name: _____
(Printed name) (Signature) (Date)

Authorized Signature: _____
(Printed name) (Signature) (Date)

Title: _____

(The following information is to be defined and completed by the END USER'S Plant Safety Engineer or other authorized party)

Hazardous Area Classification: Class _____, Division _____, Group _____

Specific Hazard/Material (please print): _____

Defining Individual: _____
(Printed name) (Signature) (Date)

Defining Authority (Title): _____

Please retain a copy of this completed form for your records.

Explosive Environment Solutions

Caution! *The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation or service of these products can result in loss of equipment or serious injury.*

Explosion Proof, Purged, and Intrinsically Safe Systems

EXPLOSION PROOF

What is an explosion-proof indicator? It's simply a digital weight indicator enclosed in a special case. The purpose of an explosion-proof indicator is not, as the name suggests, to protect the indicator. Instead, the case prevents any explosion WITHIN the case from causing subsequent fire or explosion in the surrounding atmosphere.

For example, in a grain elevator application, combustible dusts (Class II hazardous atmosphere) may be present. A spark in a non-explosion-proof indicator could ignite an elevator-wide explosion. However, with an explosion-proof indicator, the spark (or even an explosion) is contained within the case. The hazardous atmosphere cannot be ignited, and the elevator is protected.

EXPLOSION PROOF ADVANTAGES

- Explosion containment
- Requires low maintenance
- No electronics
- No moving parts

EXPLOSION PROOF DISADVANTAGES

- Cannot indicate failure of containment capability
- Cost of protection per cubic foot increases with enclosure size
- Promotes condensation
- Cumbersome, limited access
- Causes harmful heat build up
- Limited sizes
- Bulky designs
- Excessive weight

PURGE

Purged systems are ideal for hazardous environments and use positive pressure to prevent particles, gases, and fibers from entering the controller enclosure. As an added safeguard, a differential pressure switch automatically cuts off power when the pressure falls below the acceptable level. Type X, Y, and Z purging hardware is available that meets National Fire Protection Association (NFPA) article 496 guidelines.

The three configurations are as follows:

Type X Pressurizing: Reduces the classification within the protected enclosure from Division 1 to Safe.

Type Y Pressurizing: Reduces the classification within the protected enclosure from Division 1 to Division 2.

Type Z Pressurizing: Reduces the classification within the protected enclosure from Division 2 to Safe.

PURGE ADVANTAGES

- Reduces heat build-up
- Inhibits metal corrosion
- Requires low maintenance
- Increases equipment longevity
- Allow fast access to equipment
- Reduces moisture and dust build-up
- Reduces classification within enclosure
- Continuous system status indication
- Protects enclosures up to 450 cubic feet
- Allows use of any enclosure shape
- Cost of protection per cubic foot decreases with enclosure size

PURGE DISADVANTAGES

- Contains moving parts
- Requires instrument air supply
- Some systems contain electronics
- Some systems require electrical power

INTRINSICALLY SAFE

Intrinsically safe load cells and safety barriers take the explosion proof principle a step further. Intrinsic safety ensures that the indicator's electrical wiring and components are, by design, incapable of releasing enough energy to ignite flammable or combustible atmospheric mixtures in their most easily ignitable concentrations. In short, an intrinsically safe device eliminates the conditions for an explosion no matter what the circumstances.

INTRINSICALLY SAFE ADVANTAGES

- Limits energy to device
- Requires low maintenance
- No moving parts
- Ideal for sensors

INTRINSICALLY SAFE DISADVANTAGES

- One barrier is required for each conductor
- Project cost increases with number of conductors
- Offers no protection against heat, moisture and dust
- Requires protection or installation in nonclassified area
- 24 VDC, 50 mA maximum power and signal strength limit

(Specifications on back)

Explosive Environment

Hazardous Atmospheres (for reference only)

Hazardous atmospheres are divided into three general classes and two divisions:
CLASS I: Flammable Gases or Vapors
CLASS II: Combustible Dusts
CLASS III: Ignitable Fibers or Flyings
DIVISION 1: Hazard exists under normal conditions.
DIVISION 2: Hazardous material is handled, processed or stored. Hazard is not normally present, but may be released due to accident or equipment malfunction.

CLASS I:
Flammable Gases or Vapors
CLASS I, GROUP A: (d)
acetylene

CLASS I, GROUP B: (d)
acrolein (inhibited)
arsine
butadiene
ethylene oxide
hydrogen
manufactured gases containing more than 30% hydrogen by volume
propylene oxide
propylnitrate

CLASS I, GROUP C: (c, d)
acetaldehyde
allyl alcohol
n-butyraldehyde
carbon monoxide
crotonaldeghyde
cyclopropane
diethyl ether
diethylamine
epichlorohydrin
ethylene
ethylenimine
ethyl mercaptan
ethyl sulfide
morpholine
2-nitropropane
tetrahydrofuran
unsymmetrical dimethyl hydrazine (UMDH 1, 1-dimethyl hydrazine)

CLASS I, GROUP D: (c, d)
acetic acid
acetone
acrylonitrile
ammonia
benzene
butane
1-butanol (butyl alcohol)
2-butanol (secondary butyl alcohol)
n-butyl acetate
isobutyl acetate
di-isobutylene
ethane
ethanol (ethyl alcohol)
ethyl acetate
ethyl acrylate (inhibited)
ethylene diamine (anhydrous)
ethylene dichloride
ethylene glycol monomethyl ether
gasoline
heptanes
hexanes
isoprene
isopropyl ether
mesityl oxide
methane (natural gas)
methanol (methyl alcohol)
3-methyl 1-butanol (isoamyl alcohol)
methyl ethyl ketone
2-methyl 1-propanol (isobutyl alcohol)
2-methyl 2-propanol (teriary butyl alcohol)
petroleum naptha
pyridine
octanes
pentanes
1-pentanol (amyl alcohol)
propane
1-propanol (propyl alcohol)
2-propanol (isopropyl alcohol)
propylene
styrene
toluene
vinyl acetate
vinyl chloride
xylenes

CLASS II:
Combustible Dusts (c)
CLASS II, GROUP E (c, d)
Atmospheres containing metal dust, including aluminum, magnesium and their commercial alloys, as well as other metals of similarly hazardous characteristics with a resistivity of 100 ohms per centimeter.

CLASS II, GROUP F (c, d)
Atmospheres containing carbon black, charcoal, coal or coke dusts that have more than 8% total volatile material, or atmospheres containing these dusts sensitized by other materials so that they present an explosion hazard.
They will also have a resistivity greater than 100 ohms per centimeter and equal to or less than 100 megohms per centimeter.

CLASS II, GROUP G (c, d)
Atmospheres containing flour, starch or grain as well as combustible plastics or chemical dusts having resistivity greater than 1 megohm per centimeter.

CLASS III:
Ignitable Fibers or Flyings (c, d)
Atmospheres containing parts of rayon, cotton, and other textiles. Combustible fiber manufacturing and processing plants such as cotton gins, cottonseed mills, flax processing plants, clothing manufacturing plants, sawmills and other woodworking locations.

Easily ignitable fibers and flyings include rayon, cotton (including cotton linters and cotton wastes), sisal or henequen, istle, jute, hemp, tow, cocoa, oakum, baled waste kapok, spanish moss, excelsior, sawdust, wood chips and other similar materials.

(b) Rice Lake Weighing Systems' purged indicators and controllers can be custom manufactured for use in Class I, Group B atmospheres.
(c) Rice Lake Weighing Systems' explosion-proof indicators with intrinsically safe load cells may be used in these atmospheres.
(d) Rice Lake Weighing Systems' intrinsically safe systems may be used in these atmospheres.

IQ 700 IS Intrinsically Safe Digital Weight Indicator

This indicator is FM Approved for use in hazardous locations per Rice Lake Weighing Systems' control drawing file number 33476.

PART # DESCRIPTION

32708 ..... IQ 700 IS Hostile Environment Digital Weight Indicator (Requires power supply or battery)

System Hardware:

31222 ..... 115 VAC EP/IS power supply w/15' AC cable

31221 ..... 230 VAC EP/IS power supply w/15' AC cable

31215* ..... IS battery option w/12" cable w/connector

** Tilt stand #52216 required for indicator with battery*

See price page for power supply cable assembly and load cell cable assembly.

In dangerously-explosive and dimly-lit environments, the FM-approved intrinsically-safe IQ 700 IS shines as the new indicator of choice. From the big and bright LED display to the convenient numeric keypad for entering tares, the IQ 700 IS is designed to be operator-friendly. The proven IQ 700 IS hardware and familiar software make setup a breeze for installers.

A revolutionary intrinsically-safe 115 VAC power supply has been designed for mounting within the hazardous area. This eliminates the need for barrier strips, and simplifies wiring by requiring only a single AC conduit line and seal from the safe area. In addition, an optional battery is available.

For IS system compatibility, Rice Lake offers hundreds of FM-approved load cells that interface with the IQ 700 IS in accordance with the official FM control drawings. To achieve complete system integration, an optional I/O barrier mounts in the safe area for connection to printers, computers, or other peripherals.

Applications

- Class I, Divisions 1 & 2, Groups A, B, C & D; Class II, Divisions 1 & 2, Groups E, F & G and Class III hazardous locations
- Chemical plants
- Portable hazardous weighing
- Fueling stations, liquid or gaseous
- Paint and ink manufacturing and/or mixing plants
- Fertilizer plants

Standard Features

- Bright Light Emitting Diode (LED)
- Stainless steel NEMA 4X enclosure
- Front-panel digital calibration
- Automatic zero and span temperature compensation
- Excitation for four 350Ω load cells at 5 VDC
- Gross/Tare/Net computation
- Time and date
- Accumulator
- Tilt stand
- Set up parameters printout
- Bi-directional 20 mA current loop communication port

Options/Accessories

51966 ..... Battery charger, 115 VAC

63027 ..... Battery charger, 230 VAC

52216 ..... Tilt stand, required for indicator with battery

44061 ..... I/O barrier assembly

63224 ..... Analog output, 0-10 VDC or 4-20 mA (safe area option, requires I/O barrier)

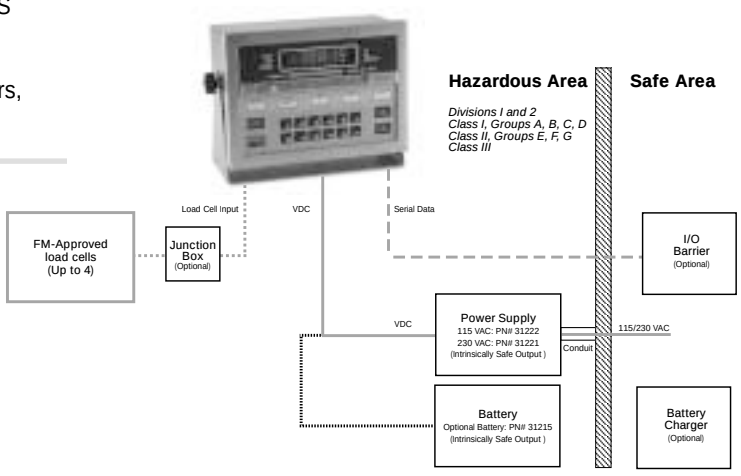
36528 ..... Additional operating manual

Serial output cable assembly (required with I/O barrier):

See price page for part numbers.

IS Cable:

Hazardous environment load cell cable—see price page for part numbers.



(Specifications on back)

LOAD CELL EXCITATION:
1 - 350Ω load cell @ 4.56 VDC
2 - 350Ω load cell @ 4.28 VDC
3 - 350Ω load cell @ 4.06 VDC
4 - 350Ω load cell @ 3.82 VDC

LOAD CELL CURRENT:
57 mA (4 x 350Ω load cells)

LOAD CELL CABLING:
6-wire with remote sensing

ANALOG SIGNAL INPUT RANGE:
0.7 mV/V - 3.2 mV/V

ANALOG SIGNAL SENSITIVITY:
0.3 µV/graduation

CONVERSION RATE:
10 updates/second

INTEGRATION TIME:
20 mSec typical

RESOLUTION:
10,000 displayed graduations (NTEP), 80,000 expanded
The maximum number of allowed graduations will vary by application

DISPLAY INCREMENTS:
1, 2, 5, 10, 20, 50, 100

UNDERRANGE COUNT CAPACITY:
(–) 400 graduations, typical

LEAD ZERO BLANKING:
Standard per NBS Handbook H-44

DISPLAY:
Six digits, Light Emitting Diode (LED); 0.6" (15.2mm), 7-segment display digits

POLARITY INDICATION:
" – " sign

DECIMAL POINT:
Configurable to 0, 0.0, 0.00, 0.000, 0.0000

LB/KG SWITCHING:
Configurable for front panel operation with conversion for tare and setpoint values

FRONT-PANEL CONTROL SWITCHES:
ZERO, GROSS/NET, TARE, TARE RECALL, PRINT, lb/kg CONV

5-POINT LINEARIZATION:
Allows up to 5 entry points when selected

NUMERIC KEYBOARD:
0-9 keys plus ENT (Enter) and CE (Clear Entry) keys

FRONT-PANEL LED ANNUNCIATORS:
Center Zero, Gross, Net, Motion, lb, kg

AZM: (ZERO TRACK)
"Gross" mode only; operable over ±5 grads, ±1.0 grads, ±3.0 grads (or Off)

PAZ AND AZM APERATURE:
Configurable to ±1.9% Full Scale or 100% Full Scale

MOTION BAND:
Configurable to ±1 or ±3 graduations, 1 second delay (or Off)

POWER INPUT:
115/230 VAC; 50/60 Hz
6 VDC battery option

OPERATING TEMPERATURE:
14°F to 104°F (-10°C to 40°C)

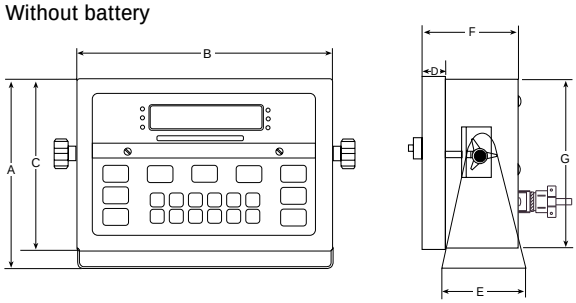
RATING/MATERIAL:
NEMA 4X polished stainless steel housing

WEIGHT:
9.5 lb (4.31 kg)

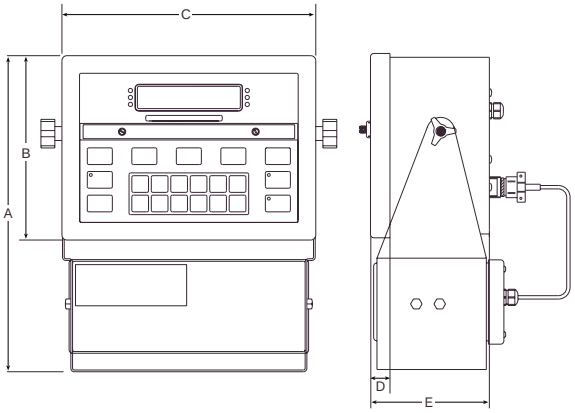
APPROVALS:
NTEP certified per H-44 at 10,000 Divisions, Class III/IIIL, CC# 89-023A2
Factory Mutual approved, #0Z0A2.AX

WARRANTY:
One year limited warranty

Without battery



With optional battery and tilt stand



DIMENSIONS

Without battery

A =	7.36" (186.9mm)	E =	3.94" (100.1mm)
B =	9.12" (231.6mm)	F =	4.14" (105.2mm)
C =	6.62" (168.1mm)	G =	6.35 (161.3mm)
D =	.70" (17.8mm)		

With optional battery and tilt stand

A =	11.35" (288.3mm)	D =	0.70" (17.8mm)
B =	6.62" (168.1mm)	E =	4.25" (107.9mm)
C =	9.12" (231.6mm)		

WARNING! The equipment contained within this Explosive Environment section requires explicit attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.

Condec™ UMC 600 IS Hazardous Environment Indicator

The UMC 600 IS weight indicator is the latest in the UMC product line that now has Factory Mutual Approval for Class I, II, III; Division 1 and 2; Groups A, B, C, D, E, F, and G.

This state-of-the-art and cost effective solution to intrinsically safe weighing is specifically designed for easy installation.

UMC 600 IS Part Numbering Guide

UMC 600 IS ( ) ( ) ( ) ( )

UNIT MOUNTING STYLE
- A = Tilt stand
- B = Panel mounting bracket

OPERATING POWER
- A = 115 VAC, 50/60 Hz
- B = Battery power supply

DISPLAY
- A = Light Emitting Diode (LED)
- B = Liquid Crystal Display (LCD)

TERMINATIONS
- A = Mating connectors
- B = Junction box/mating cables

PART # DESCRIPTION

115 VAC

57038 .... UMC600ISAAAA, tilt stand, 115 VAC, LED, mating connectors

61943 .... UMC600ISAABA, tilt stand, 115 VAC, LCD, mating connectors

57043 .... UMC600ISAAAB, tilt stand, 115 VAC, LED, junction box/ mating cables

BATTERY POWER

62079 .... UMC600ISABAA, tilt stand, battery power supply, charger, LED, mating connectors

62097 .... UMC600ISABBA, tilt stand, battery power supply, charger, LCD, mating connectors

62081 .... UMC600ISABAB, tilt stand, battery power supply, charger, LED, junction box/mating cables

Applications

- Fueling stations, liquid or gaseous
- Paint & ink manufacturing and mixing plants
- Fertilizer plants
- Portable hazardous weighing
- Control solutions for Class I, II, III; Division 1 and 2; Groups A, B, C, D, E, F, and G

Standard Features

- Auto and manual batch modes with setpoint output control
- Bi-directional 20 mA current loop port
- Light Emitting Diode (LED) or Liquid Crystal Display (LCD)
- Stainless steel NEMA 4 enclosure
- Time and date
- Tilt stand
- Gross/Tare/Net computation
- Front-panel calibration

Options/Accessories

45898 ..... I/O cable and load cell cable (sold by foot)

54074 ..... Load cell connector kit, 6-pin

54084 ..... I/O connector kit, 5-pin

45897 ..... Power supply cable (sold by foot)

54080 ..... Power supply connector kit, 3-pin

54087 ..... Battery charger, 115 VAC

63224 ..... Analog output, 0-10 VDC or 4-20 mA (safe area option, requires I/O barrier)

55683 ..... I/O barrier assembly

58645 ..... Additional operating manual

(Specifications on back)

LOAD CELL EXCITATION:
1 - 350Ω load cell @ 4.56 VDC
2 - 350Ω load cell @ 4.28 VDC
3 - 350Ω load cell @ 4.06 VDC
4 - 350Ω load cell @ 3.82 VDC

LOAD CELL CURRENT:
57 mA (4 x 350Ω load cells)

LOAD CELL CABLING:
6-wire with remote sensing

ANALOG SIGNAL INPUT RANGE:
0.3 uV/V - 3.3 mV/V

ANALOG SIGNAL SENSITIVITY:
0.3 uV/graduation

CONVERSION RATE:
10 updates/second

INTEGRATION TIME:
20 mSec typical

RESOLUTION:
10,000 displayed graduations (NTEP), 80,000 expanded
The maximum number of allowed graduations will vary by application

DISPLAY INCREMENTS:
1, 2, 5, 10, 20, 50, 100

UNDERRANGE COUNT CAPACITY:
(-) 400 graduations, typical

LEAD ZERO BLANKING:
Standard, per NBS Handbook H-44

DISPLAY:
6-digits, Light Emitting Diode (LED) or Liquid Crystal Display (LCD), 0.6" (15.2mm), 7 segment display digits

POLARITY INDICATION:
(-) sign

DECIMAL POINT:
Configurable to 0, 0.0, 0.00, 0.000, 0.0000

LB/KG SWITCHING:
Configurable for front panel operation with conversion for tare and setpoint valves

FRONT-PANEL CONTROL SWITCHES:
ZERO, GROSS/NET, TARE, TARE RECALL, PRINT, lb/kg CONV

NUMERIC KEYBOARD:
0-9 keys ENT (Enter) and CE (Clear Entry) keys

FRONT-PANEL LED ANNUNCIATORS:
Center Zero, Gross, Net, Motion, lb, kg

AZM: (ZERO TRACK)
"Gross" mode only; operable over ±5 grads, ±1.0 grads, ±3.0 grads (or Off)

PAZ AND AZM APERATURE:
Configurable to ±1.9% Full Scale or 100% Full Scale

MOTION BAND:
Configurable to ±1 or ±3 graduations, 1 second delay (or Off)

POWER INPUT:
115 VAC; 50/60 Hz
6 VDC battery option

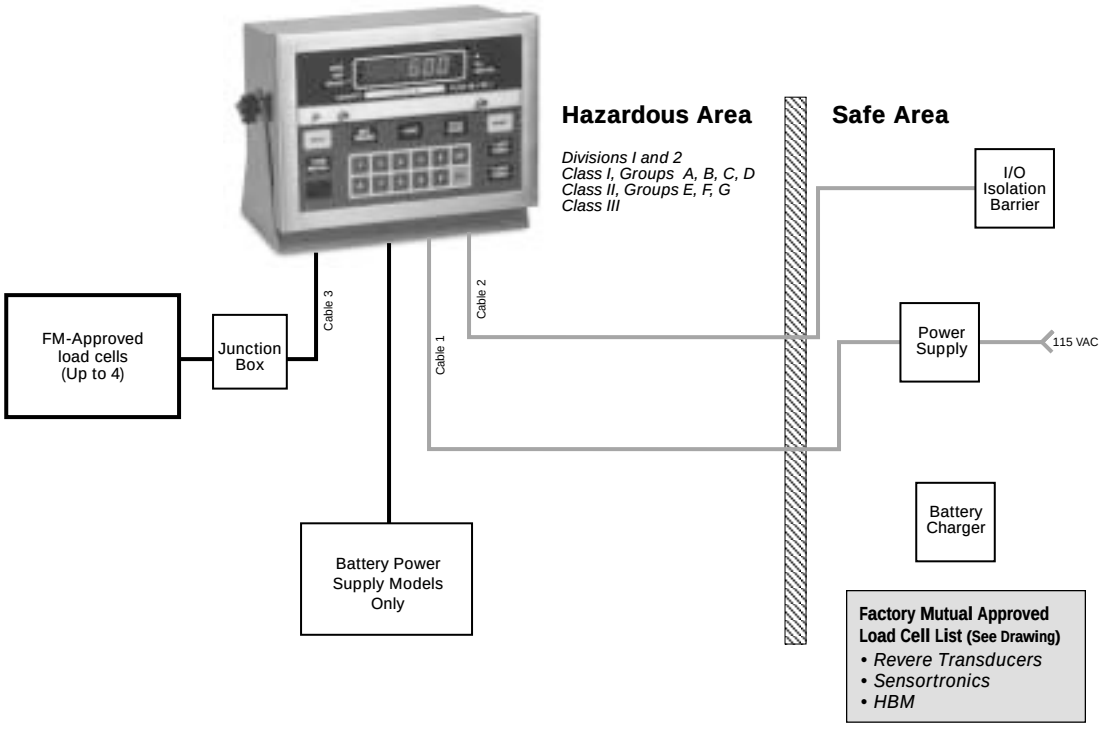
OPERATING TEMPERATURE:
14°F to 104°F (-10°C to 40°C)

RATING/MATERIAL:
NEMA 4X polished stainless steel housing

OVERALL DIMENSIONS:
9.12" L x 6.62" H x 4.18" W
(251mm L x 168mm H x 106mmW)

APPROVALS:
Factory Mutual approved, #J.I. 1B2A9.AX (AC power) and #J.I 3000436 (battery module)

WARRANTY:
One year limited warranty



EL232 XPCD Explosion Proof Remote Serial Display

PART # DESCRIPTION
20904 ..... EL232 XPCD

Applications

- For remote weight readings in Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G and Class III hazardous environments

Standard Features

- 20 mA current loop or RS-232 input
- Compatible with all IQ plus® series indicators
- NEMA 4, 7CD, 9EFG enclosure

Options/Accessories

Options and accessories for the EL232 XPCD may require additional hardware; consult factory with your application and specification needs.

- Vinyl organisol coating
- Polyurethane coating
- 20 mA current loop output
- Multi-scale inputs (4) accumulative
- Accumulation with reset
- RS-232 intrinsic safety barrier

Intrinsic Safety Barriers

PART # DESCRIPTION

Barrier Sets

19382 ..... Uncased barrier set for use with IQ plus 320 HE, IQ plus 810 HE and IQ plus 810SS

19505 ..... Cased barrier set for use with UMC555, UMC2000, IQ plus 310, IQ plus 700HB, UMC600, IQ plus 800 and IQ plus 810

Individual Barriers

30263 ..... +/- Signal barrier

30264 ..... +/- Sense barrier

30265 ..... + Excitation barrier

30266 ..... - Excitation barrier

Applications

Uncased unit

- For use with IQ plus® 320HE, IQ plus® 810HE and IQ plus® 810SS

Cased unit

- For use with UMC555, UMC2000, IQ plus® 310, IQ plus® 700HB, UMC600, IQ plus® 800 and IQ plus® 810

Standard Features

- Each system features excitation, sense and signal barriers
- Available in an enclosure for external mounting or in a chassis mount version
- R Stahl or equivielent barriers that are approved by Factory Mutual
- Load cells must have a bridge resistance of 350 to 750Ω

Options/Accessories

Consult factory for systems designed for other indicators

(Specifications on back)

EL232 XPCD

Specifications

DISPLAY:
High-intensity, red LED, 0.8" (20.3mm) high digits

INPUT VOLTAGE:
115 VAC, 60 Hz

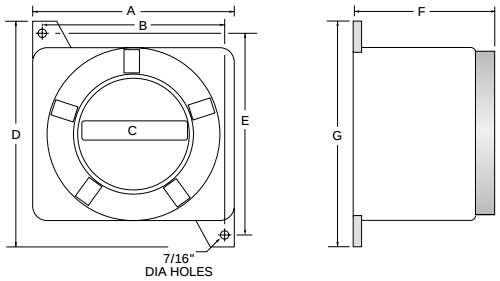
WEIGHT:
Approximately 25 lb (11.3 kg)

NEC CLASSIFICATIONS:
Class I, Division 1, Groups C & D; Class II, Division 1, Groups E, F & G and Class III hazardous environments

BAUD RATE:
1200, 2400, 4800 and 9600

INTERFACES:
20 mA CL and RS-232 standard. The EL232 XPCD can communicate, as shipped, with twelve of the most common scale indicator families currently available. Please consult factory for model numbers and interface requirements.

WARRANTY:
One year limited warranty



DIMENSIONS

A = 10.50" (266.7mm)	D = 11.75" (298.5mm)
B = 9.50" (241.3mm)	E = 10.50" (266.7mm)
C = 5.81" (147.7mm) (Glass Diameter)	F = 7.50" (190.5mm)
	G = 11.75" (298.5mm)

CAUTION! The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.

Barriers

Specifications

PART NUMBER 30263 +/- SIGNAL BARRIER

VOLTAGE RANGE:
6 - 7.7 VDC

INTERNAL RESISTANCE:
482Ω

OPEN CIRCUIT VOLTAGE:
9.6

SHORT CIRCUIT CURRENT:
20.4 mA

CLASSIFICATIONS:
FM3610 Class I, II, III, Cenelec EN50 020, CSA C22.2 No.157, Short circuit-proof at rated voltage Group A to G

PART NUMBER 30264 +/- SIGNAL BARRIER

VOLTAGE RANGE:
6 - 8 VDC

INTERNAL RESISTANCE:
482Ω

OPEN CIRCUIT VOLTAGE:
9.3

SHORT CIRCUIT CURRENT:
19.8 mA

CLASSIFICATIONS:
FM3610 Class I, II, III, Cenelec EN50 020, CSA C22.2 No.157, Short circuit-proof at rated voltage Group A to G

PART NUMBER 30265 + EXCITATION BARRIER

VOLTAGE RANGE:
6 - 7.3 VDC

INTERNAL RESISTANCE:
30Ω

OPEN CIRCUIT VOLTAGE:
8.6

SHORT CIRCUIT CURRENT:
377.6 mA

CLASSIFICATIONS:
FM3610 Class I, II, III, Cenelec EN50 020, CSA C22.2 No.157, Short circuit-proof at rated voltage Group A to G

PART NUMBER 30266 + EXCITATION BARRIER

VOLTAGE RANGE:
6 - 7.3 VDC

INTERNAL RESISTANCE:
30Ω

OPEN CIRCUIT VOLTAGE:
8.6

SHORT CIRCUIT CURRENT:
377.6 mA

CLASSIFICATIONS:
FM3610 Class I, II, III, Cenelec EN50 020, CSA C22.2 No.157, Short circuit-proof at rated voltage Group A to G

IQ plus® 310 XPCD

Explosion Proof Weight Indicator

PART # DESCRIPTION

19212 ..... IQ plus® 310 XPCD Indicator

The IQ plus 310 XPCD is built with advanced digital circuitry providing fast, stable and accurate readings in hazardous industrial environments. Highly-sophisticated analog-to-digital conversion, RFI/EMI signal protection and digital filtering provide high-level signal integrity in hazardous industrial environments.

The 310 XPCD features a cast aluminum explosion-proof enclosure certified for use in Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F, & G; NEMA 4, 7CD, 9EFG. Four externally-mounted buttons provide operator interface.

Our exclusive RATTLETRAP™ vibration control eliminates interference from agitators, mixers, blenders and other sources of industrial environment vibration. Now you can achieve stable, accurate weight information, regardless of motion on or around your scale.

Printer and computer communication is available with one full duplex RS-232 port and a simplex RS-232 or 20 mA port. All operation, setup and calibration features can be duplicated from a computer or other controller. Two digital inputs may be used to simulate any two front-panel keys, enabling remote “push-button” control of various weighing operations such as tare, zero or print; consult factory.

Applications

- Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G; Class III hazardous environments
- Chemical plants
- Fueling stations

Standard Features

- Cast aluminum explosion-proof enclosure with pre-wired intrinsic safety barriers
- 4 button external: Gross/Net, Tare, Zero, Print
- Bright, bold vacuum fluorescent display (VFD)
- Wall mount
- Two communication ports, (1) simplex, (1) full duplex
- Full duplex port: RS-232: simplex port: RS-232 or 20 mA
- The maximum number of displayed graduations will vary by application; consult factory
- Approximately 1,000,000 graduations internal
- 50 updates per second
- AC powered; no batteries to charge or replace
- R Stahl® intrinsic safety barriers
- RATTLETRAP® vibration control
- Includes 2 sealing fittings, packing and cement

Options/Accessories

Options and accessories for the 310 XPCD may require additional hardware; consult factory with your application and specification needs.

- Parallel BCD output
- Breather drain fittings
- Vinyl organisol coating
- Polyurethane coating

(Specifications on back)

LOAD CELL EXCITATION:
1 350-ohm load cell at 8.5 VDC
4 350-ohm load cells at 5.88 VDC
6 350-ohm load cells at 4.40 VDC

LOAD CURRENT:
Capable of driving 6 350-ohm load cells per channel

INTERCONNECTION CABLE REQUIREMENTS:
6-wire, remote sensing required

ANALOG SIGNAL INPUT RANGE:
0.5 mV/V to 4.0 mV/V

ANALOG SIGNAL SENSITIVITY:
0.3 microvolts/graduations minimum

INPUT OVERLOAD:
±12V continuous

A/D CONVERSION RATE:
50/second

INTEGRATION TIME:
20 milliseconds

RESOLUTION:
Selectable up to 60,000 displayed graduations
Approximately 1,000,000 graduations internal
The maximum number of allowable displayed graduations will vary by application; consult factory

DISPLAY INCREMENTS:
1, 2, 5

OVER/UNDERRANGE BLANKING:
F.S., F.S.+1d, F.S.+9d, F.S.+2%

OVER/UNDER CAPACITY ANNUNCIATION:
Overload displayed as: ---
Underload displayed as: ___

LEAD ZERO BLANKING:
Standard, per NIST H-44 requirements

DISPLAY:
14-segment vacuum fluorescent, 7 full-digit display

POLARITY INDICATION:
" – " sign

DECIMAL POINTS:
8888888, 888888.8, 88888.88, 8888.888, 888.8888, 88.88888, 8.888888, 8888800, 8888880

LB/KG SWITCHING:
Front panel push-button, optional

FRONT PANEL CONTROL SWITCHES:
Zero, Net/Gross, Tare, Print

FRONT PANEL ANNUNCIATORS:
lb, kg, Preset Tare, Tare in System, Stable, Center of Zero, Gross, Net, Minus, Entry mode

AZM: (ZERO TRACK)
"Gross" mode only

AZM APERTURE:
±2% of selected full scale capacity or 100%, selectable

AZM CAPTURE RANGE:
Selectable: "Off", ±.5, ±1, ±2, or ±3 graduations

DIGITAL FILTERING:
3 separately programmable digital filter parameters with selection 1, 2, 4, 8, 16, 32, 64

MOTION BAND:
1, 2, 3, Off

MOTION TIME SENSITIVITY:
Fixed at 1 second

POWER:
Line Voltages: 115 or 230 VAC +10%/-15%
Frequency: 50/60 Hz, 12VA maximum
Fusing: 115 VAC: 2 x 0.25A SB (UL/CSA) 5x20mm
230 VAC: 2 x T 125 mA (IEC 127) 5x20mm

DISPLAY CHECK:
All digit segments and annunciators simultaneously illuminated upon application of power

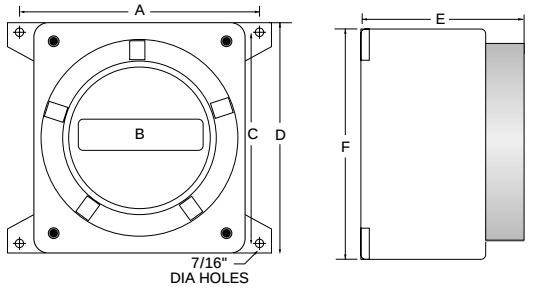
OPERATING TEMPERATURE:
14°F to 104°F (-10°C to 40°C)

ENCLOSURE:
NEMA 4, 7CD, 9EFG housing for Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G; Class III hazardous environments

CONDUIT ENTRIES:
3 @ 3/4" - NPT located in bottom side of enclosure 3.625" from mounting plane and centered on 3.5" centers

WEIGHT:
Approximately 44 lb (20 kg)

WARRANTY:
One year limited warranty



DIMENSIONS

A =	12.13" (308.0 mm)	D =	12.0" (304.8 mm)
B =	7.38" (187.3 mm)	E =	8.50" (215.9 mm)
C =	10.75" (273.1 mm)	F =	12.0" (304.8 mm)

CAUTION! The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.

UMC555 XPCD

Explosion Proof Digital Weight Indicator

PART # **DESCRIPTION**

19211 ..... UMC555 XPCD

The UMC555 XPCD is a full-featured explosion proof weight indicator at a very competitive price. The UMC555 XPCD offers the latest in solid state reliability and accuracy, packaged for direct use in Class I and II environments without batteries or trickle charges. UMC555 XPCD indicators are AC powered and feature a bright 0.6" LED display ideal for indoor or outdoor environments.

The UMC555 XPCD model comes complete with R. Stahl® intrinsic safety barriers and can be used with up to 4 350-ohm cells, 8 700-ohm cells, or 10 1,000-ohm strain gauge load cells in Class I, Groups C & D, Class II, Groups E, F & G, or Class III hazardous environments. The unit is also available without barriers for use in Division 2 areas where the customer determines barriers are not necessary.

Applications

- Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G and Class III hazardous environments
- Paint plants
- Fertilizer plants

Standard Features

- AC powered, 115 VAC
- Bright 0.6" LED display
- NEMA 4, 7CD, 9EFG enclosure
- Full digital configuration and calibration
- 10,000 displayed graduation, 100,000 internal graduations
- Temperature compensated to comply with NTEP and Canadian guidelines
- Sensitivity to 0.3 µV/graduation
- External “Zero”, “Gross/Net”, “Tare” and “Print” explosion proof push buttons
- RFI/EMI shielding
- Full duplex RS-232, simplex RS-232 and current loop
- 10 updates/second conversion rate with adjustable digital averaging and “auto-averaging”
- Includes 2 sealing fittings, packing and cement

Options/Accessories

Options and accessories for the UMC555 XPCD may require additional hardware; consult factory with your application and specification needs.

- Parallel BCD output
- 0-10 VDC analog output
- 4-20 mA analog output
- Breather drain fittings
- Vinyl organisol coating
- Polyurethane coating

(Specifications on back)

LOAD CELL EXCITATION:
±5 VDC, fixed short-circuit proof

LOAD CURRENT:
Suitable for up to 4 350-ohm, 8 700-ohm or 10 1,000-ohm strain gauge load cells

LOAD CELL CABLING:
6-wire with full remote sensing required through the intrinsic barrier system

ANALOG SIGNAL INPUT RANGE:
0.7 mV/V - 2.0 mV/V (“High Span”)
1.7 mV/V - 3.2 mV/V (“Low Span”)

ANALOG SIGNAL SENSITIVITY:
0.3 microvolts/graduations maximum

TRANSIENT OVERLOAD:
±100 VDC without damage,
100 microsecond duration at 2% duty cycle

UPDATE RATE:
10 updates per second, no averaging

INTEGRATION TIME:
20 millisecond, typical

DISPLAY RESOLUTION:
10,000 displayed grads
100,000 internal grads

DISPLAY INCREMENTS:
1, 2, 5, 10, 20, 50, 100

FULL SCALE CAPACITY:
Programmable 1.0000 x 0.0001 through 999900 x 100

DISPLAY BLANKING:
Overrange blanking occurs at 103% of full scale capacity.
Under-range at -400 displayed graduations, typical

LEAD ZERO BLANKING:
Standard, per NIST H-44 requirements

DISPLAY:
Six decades, 0.6" red LED

POLARITY INDICATION:
“ – ” sign LED

DECIMAL POINTS:
Keyboard selectable to the right of any active digit

LB/KG SWITCHING:
Via customer supplied switch with conversion for weight and tare values. May be specified instead of Print Switch

EXTERNAL SWITCHES:
Zero, Gross/Net, Tare, Print

ANNUNCIATORS:
Center Zero, Net, lb, kg, Motion (spot LED with white legend)

AZM: (ZERO TRACK)
“Gross” mode only

AZM CAPTURE BAND:
Selectable: “Off”, ±0.5, ±1.0, or ±3.0 graduations

AZM APERTURE:
Keyboard selectable to ±1.9% or 100% Full Scale

MOTION BAND:
Keyboard selectable to ±1 or ±3 displayed grads, 1 second delay

POWER INPUT:
115/230 VAC, 50-60 Hz

DISPLAY CHECK:
All digit segments and annunciators sequentially illuminated upon power application

SERIAL OUTPUT:
Standard RS-232 full duplex port; RS-232 simplex port; 20 mA simplex current loop

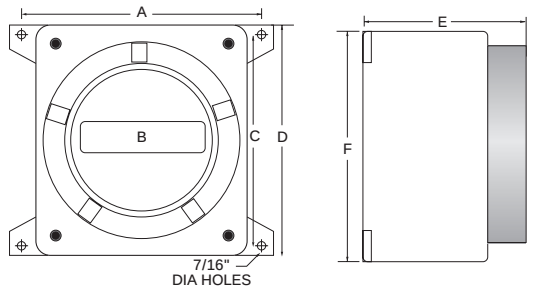
BAUD RATES:
1200, 2400, 4800, 9600 individually selectable for ports 1 and 2

ENCLOSURE:
Cast aluminum explosion proof housing for Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G hazardous environments; NEMA 4, 7CD, 9EFG

CONDUIT ENTRIES:
3 @ 3/4" - NPT located in bottom side of enclosure 3.625" from mounting plane and centered on 3.5" centers

WEIGHT:
Approximately 52 lb (23.6 kg)

WARRANTY:
One year limited warranty



DIMENSIONS

A = 12.13" (308.0 mm)	D = 12.0" (304.8 mm)
B = 7.38" (187.3 mm)	E = 8.50" (215.9 mm)
C = 10.75" (273.1 mm)	F = 12.0" (304.8 mm)

CAUTION! The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.

IQ plus® 810 XPCD

Explosion Proof Digital Weight Indicator

PART # DESCRIPTION

19213 ..... IQ plus 810 XPCD

The IQ plus 810 XPCD... never before has this level of power been available in a digital weight indicator. Its unique hybrid digital circuitry provides the fastest, most accurate and flexible performance that existing technology can offer. The bright blue-green display is unmistakable even in poor visibility conditions. An optional LED bar graph enhances software capabilities and interactive operation.

Our exclusive RATTLETRAP® vibration control eliminates interference from agitators, mixers, blenders and other sources of industrial environment vibration. Now you can achieve stable, accurate weight information regardless of motion on or around your scale.

The IQ plus 810 XPCD is a batching Automation Control Center™. Its unique programmable setpoint software contains a comprehensive array of batch process possibilities. It's even self-correcting, learning as it works to assure your process integrity. The standard configuration includes 20 setpoint steps, 4 digital outputs and 3 digital inputs, providing more basic power than many custom controllers. An array of hardware and software options offer virtually unlimited solutions for your complex operations.

Applications

- Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G and Class III hazardous environments
- Multiple ingredient batching
- Multiple scale operation
- Complex material flow control

Standard Features

- Cast aluminum explosion proof enclosure Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F, & G; NEMA 4, 7CD, 9EFG
- Bright, bold vacuum fluorescent display (VFD)
- Includes four-channel opto22 rack with four output relays
- 27 individual externally mounted buttons for setpoint or fixed tare entry, Gross/Net, Tare, Units and Print
- Time and date
- 20 updates/second
- Advanced digital filtering
- RATTLETRAP® vibration control
- 20 programmable setpoint steps
- Multi-channel accumulators
- Three digital inputs, TTL or dry contact closure
- Four TTL digital outputs expandable to 16—consult factory
- Selectable print data and format, via EDP port
- One communication port; EDP port, full duplex RS-232 or 20 mA selectable; optional—One additional serial port
- Multi-scale control expandable to four scale inputs
- Intrinsic barriers are included for a single scale input; for multi-scale applications, consult factory
- XPCD seal-off kit for four holes
- Front panel keyswitch-protected digital calibration and configuration

Options/Accessories

Options and accessories for the IQ plus 810 XPCD may require additional hardware; consult factory with your application and specification needs.

- Multi-scale input module and expansion board
- Analog output module, 0-10VDC/4-20 mA
- Header in print
- Rate of change
- Peak hold
- Password
- 12-channel digital setpoint output module
- 48-segment LED bar graph module
- 4-channel relay rack
- 16-channel relay rack
- RS-485 serial communication
- 20 mA full duplex EDP port

I/O relay modules sold separately:

- DC input relay module
- Dry contact output relay module (N/O)
- AC output relay module, 115 VAC
- AC input relay module, 115 VAC
- AC output relay module, 230 VAC (N/C)
- AC input relay module, 230 VAC (N/O)

(Specifications on back)

LOAD CELL EXCITATION:
1 350-ohm load cell at 8.5 VDC
4 350-ohm load cells at 5.88 VDC

LOAD CURRENT:
Capable of driving 4 350-ohm load cells per channel

INTERCONNECTION CABLE REQUIREMENTS:
6-wire remote sensing required

ANALOG SIGNAL INPUT RANGE:
0.6 mV/V - 3.9 mV/V

ANALOG SIGNAL SENSITIVITY:
0.3 microvolts/graduations minimum
Legal-for-trade recommended minimum
1 microvolt/graduations

INPUT OVERLOAD:
±12V continuous, static discharge protected

CONVERSION RATE AT FULL SCALE:
20/second, typical (standard resolution)
15/second, typical (high resolution)
Added channels reduce conversion rate per channel

RESOLUTION:
Selectable up to 100,000 displayed graduations
Selectable up to 740,000 graduations internal
The maximum number of displayed graduations will vary by application—consult factory

DISPLAY INCREMENTS:
1, 2, 5

UNDERRANGE BLANKING:
-2 mV signal nominal

OVER/UNDER CAPACITY ANNUNCIATION:
Overload displayed as: ---
Underload displayed as: ___

LEAD ZERO BLANKING:
Standard, per NIST H-44 requirements

DISPLAY:
Large .55" (14.0mm) 7-digit, 14-segment blue/green VFD

POLARITY INDICATION:
" – " sign

DECIMAL POINTS:
8888888, 888888.8, 88888.88, 8888.888, 888.8888, 88.88888, 8.888888, 8888800, 8888880

LB/KG SWITCHING:
Front panel push button

FRONT PANEL CONTROL SWITCHES:
Zero, Net/Gross, Tare, Units, Print, Disp Accum, Disp R.O.C., Disp Tare, Time/Date, New I.D., Base #, Set Point, Clear

FRONT PANEL ANNUNCIATORS:
lb, kg, R.O.C., Accum, Push Tare, Keyed Tare, Motion, Center of Zero, Gross, Net

SERIAL OUTPUT:
"EDP" port, full duplex RS-232 or 20 mA
"Printer" port, simplex RS-232 and 20 mA current loop - optional

DIGITAL INPUTS:
3 inputs, TTL or switch closure, active low

AZM: (ZERO TRACK)
"Gross" mode only

SETPOINTS:
20 fully programmable steps

AZM APERTURE:
±1.9% of selected full scale capacity or 100%, internal selectable

AZM CAPTURE RANGE:
Selectable to: "Off", ±.5, ±1, or ±3 graduations

ANALOG FILTERING:
Software selectable: 2, 8 Hz typical/3 pole, Off (25 Hz)

DIGITAL FILTERING:
Standard range software selectable: 1,2,4,8,16,32,64,128,Off
RATTLETRAP® high vibration control: 4,8,16,32,64,128

MOTION BAND:
1, 3, 5 or 10 dd

MOTION TIME SENSITIVITY:
Fixed at 1 second

POWER:
Line Voltages: 115 or 230 VAC +10%/-15%
Frequency: 50 or 60 Hz
Power Consumption: 12 VA with minimum configuration, 30 VA with all options
Fusing: 0.25A SB (UL/CSA) 5x20mm @ 115V operation
0.125A SB (UL/CSA) 5x20mm @ 230V operation

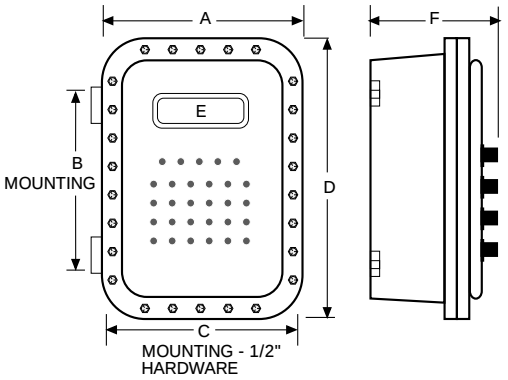
DISPLAY CHECK:
All digit segments and annunciators simultaneously illuminated upon application of power

OPERATING TEMPERATURE:
14°F to 104°F (-10°C to 40°C)

WEIGHT:
Approximately 135 lb (61.2 kg)

WARRANTY:
One year limited warranty

ENCLOSURE:
NEMA 4, 7CD, 9EFG housing for Class I, Division 1 & 2, Groups C & D; Class II, Division 1 & 2, Groups E, F & G; Class III hazardous environments



DIMENSIONS

A = 17.5" (444.5mm)
B = 21.0" (533.4mm)
C = 17.5" (444.5mm)
D = 29.0" (736.6mm)
E = 7.0"x2.0" (177.8mmx50.8mm)
F = 12.0" (304.8mm)

CAUTION! The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.

IQ plus® 810 Purged/Pressurized Hazardous Environment Indicator

The IQ plus 810 indicator has the following approvals:

Measurement Canada Approved

The Purged/Pressurized systems have the following approvals:

UL & CSA approval applies to electrical power control unit only

PART # DESCRIPTION

40081 ..... IQ plus 810 X-Purged/Pressurized Indicator

The strength of the IQ plus 810 indicator is now available for use in hazardous areas without the expense of NEMA 7/9 explosion-proof hardware. If your customer has an existing plant air or inert gas system, the purged IQ plus 810 may be the solution to their hazardous environment control requirements. This indicator is manufactured to the American National Standards Institute/National Fire Protection Association (ANSI/NFPA) Article 496 guidelines for purged and pressurized enclosures. Positive pressure within the enclosure prevents particles, gases, and fibers from entry. A differential pressure switch may be used to remove power when the pressure falls below the acceptable level, such as when the door is opened or the enclosure is penetrated. Three possible configurations are available:

Type X Pressurizing: Reduces the classification within the protected enclosure from Division 1 to Safe

Type Z Pressurizing: Reduces the classification within the protected enclosure from Division 2 to Safe

Note: Plant safety engineers and certified electricians must always be involved in the specification and installation of any explosive environment equipment.

Note: Consult factory for preset factory configuration of enclosure pressure switch cutoffs.

Applications

- Hazardous areas that require setpoint control
- Petroleum refineries, solvent plants, grain dust areas, fueling stations
- Control solutions for Class I, Divisions 1 and 2, Groups C and D; Class II, Divisions 1 and 2, Groups E, F, and G; Class III hazardous environments

Standard Features

- Enclosure manufactured to ANSI/NFPA Article 496 guidelines for purged/pressurized enclosures
- Flow and pressure gauges used to track and display purge status
- Factory-installed safety barriers for hazardous area interface
- Enclosure protection vent with tamper-proof regulator
- SURVIVOR® oil tight switches per NFPA 496
- NEMA 4X stainless steel wall mount enclosure
- Bright, bold Vacuum Fluorescent Display (VFD) with1/4" clear vinyl cover plate per NFPA 496
- Full keyboard for setpoint or fixed tare entry
- Front-panel calibration
- Advanced digital filtering and RATTLETRAP® vibration control
- 20 programmable setpoint steps
- Multi-channel accumulators
- 3 digital inputs, TTL or hard contact closure; 4 TTL digital outputs, expandable to 16
- Multi-scale control expandable to 4 scale inputs, with individual scale setup
- NTEP and Canadian Weights & Measurements certified
- Models with JetPak™ option feature 100 Hz A/D for 100 updates per second; available with single channel unit only

Options/Accessories

19363 ..... 48-segment LED bar graph module
40386 ..... Dual load cell input module (3rd and 4th scale)
19371 ..... Single load cell input module
40385 ..... Expansion board (keyboard connection only)
19357 ..... Analog output module, 0-10 VDC/4-20 mA
19358 ..... Header in print
19359 ..... Rate of change
19360 ..... Peak hold
30547 ..... Password
19372 ..... RS-485 communication
19374 ..... 20 mA full duplex EDP port
36642 ..... 12-channel digital setpoint output mod
19375 ..... Supervisory setpoint configuration access switch
19365 ..... 4-channel relay rack
19373 ..... 16-channel relay rack (Requires #19362 setpoint expander board)
30263 ..... ± Signal barrier
30264 ..... ± Sense barrier
30265 ..... + Excitation barrier
30266 ..... – Excitation barrier
31542 ..... RS-232 communications barrier
31202 ..... 4-20 mA analog output barrier

I/O relay modules sold separately:

15969 .... DC input relay module
15970 .... Dry contact output relay (N/O)
22847 .... 230 VAC output relay (N/C)
15971 .... AC output relay module
15972 .... AC input relay module
36632 .... 230 VAC output relay (N/O)

42100 ..... Additional operating manual (Version 3)

(Specifications on back)

LOAD CELL EXCITATION:
Maintained intrinsically safe by factory-selected barrier set (on up to 4 channels)

INTERCONNECTION CABLE REQUIREMENTS:
6-wire shielded (sense leads required)

ANALOG SIGNAL INPUT RANGE:
0.6 mV/V - 3.9 mV/V

ANALOG SIGNAL SENSITIVITY:
0.3 microvolts/graduation minimum
Legal-for-trade recommended minimum 1 microvolt/graduation

CONVERSION RATE AT FULL SCALE:
20/second, typical (standard resolution)
10/second, typical (high resolution)
Added channels reduce conversion rate per channel

RESOLUTION:
Selectable up to 100,000 displayed graduations
Selectable up to 740,000 graduations internal

DISPLAY INCREMENTS:
1, 2, 5

LEAD ZERO BLANKING:
Standard, per NIST H-44 requirements

DISPLAY:
Large .55" (14.0mm) 7-digit, 14-segment blue/green VFD

DECIMAL POINTS:
8888888, 888888.8, 88888.88, 8888.888, 888.8888, 88.88888, 8.888888, 8888800, 8888880

LB/KG SWITCHING:
Front-panel push button

FRONT-PANEL CONTROL SWITCHES:
Zero, Net/Gross, Tare, Units, Print, Disp Accum, Disp R.O.C., Disp Tare, Time/Date, New ID, Base #, Set Point, Clear

FRONT-PANEL ANNUNCIATORS:
Lb, Kg, R.O.C., Accum, Push Tare, Keyed Tare, Motion, Center of Zero, Gross, Net

SERIAL OUTPUT:
"EDP" port, full duplex RS-232 or 20 mA optional
"Printer" port, simplex RS-232 and 20 mA current loop

DIGITAL INPUTS:
3 inputs, TTL or switch closure, active low

DIGITAL OUTPUTS:
4 outputs standard, TTL active low, expandable to 16

SETPOINTS:
20 fully-programmable setpoint steps

AZM CAPTURE RANGE:
Selectable to: "Off", ±.5, ±1, or ±3 graduations

ANALOG FILTERING:
Software selectable: 2, 8 Hz typical/3 pole, off (25 Hz)

DIGITAL FILTERING:
Standard range software selectable: 1, 2, 4, 8,16, 32, 64, 128
RATTLETRAP® high vibration control: 4, 8, 16, 32, 64, 128

MOTION BAND:
1, 2, 3, 5, 10, 20, off

MOTION TIME SENSITIVITY:
Fixed at 1 second

POWER:
Line voltages: 115/230 VAC + 10%/-15%
Frequency: 50 or 60 Hz
Power consumption: 12 watts with minimum configuration, 30 watts with all options
Fusing: 0.25A SB (UL/CSA) 5x20mm @ 115/230 operation
0.125A SB (UL/CSA) 5x20mm @ 240V operation

DISPLAY CHECK:
All digit segments and annunciators simultaneously illuminated upon application of power

OPERATING TEMPERATURE RANGE:
14°F to 104°F (-10°C to 40°C)

PACKAGING:
Enclosure: NEMA 4X FRP wall mount (IQ plus 810HE); NEMA 4X stainless steel (IQ plus 810SS)
Weight: IQ plus 810HE = approximately 17.3 lb (7.8 kg)
IQ plus 810SS = approximately 24 lb (10.9 kg)

APPROVALS:
NTEP certified per H-44 at 10,000 Divisions, Class III/IIIL, CC# 92-013 A2. Measurement Canada approved, AM-4840

WARRANTY:
One year limited warranty

EPCU Pressurized Unit:

SUPPLY PRESSURE RANGE:
5-120 PSI max.

SUPPLY REQUIREMENTS:
Clean air or inert gas
1.5 oz @ 20 Micron filtration
0.25"/1" @ safe pressure

SYSTEM SUPPLY PORT:
1/4" tube fitting

EPCU CONDUIT PORT SIZE:
1/2" FPT

EPCU POWER REQUIREMENTS:
115 VAC 60 Hz

EPV-1 VENT:
120 PSI maximum to 5 PSI minimum

DIMENSIONS

The dimensions of equipment configurations vary with each application. Consult factory for individual dimensions.

CAUTION! The equipment contained within this Explosive Environment section requires greater attention to specification and installation guidelines. Improper specification, installation, or service of these products can result in loss of equipment or serious injury.