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