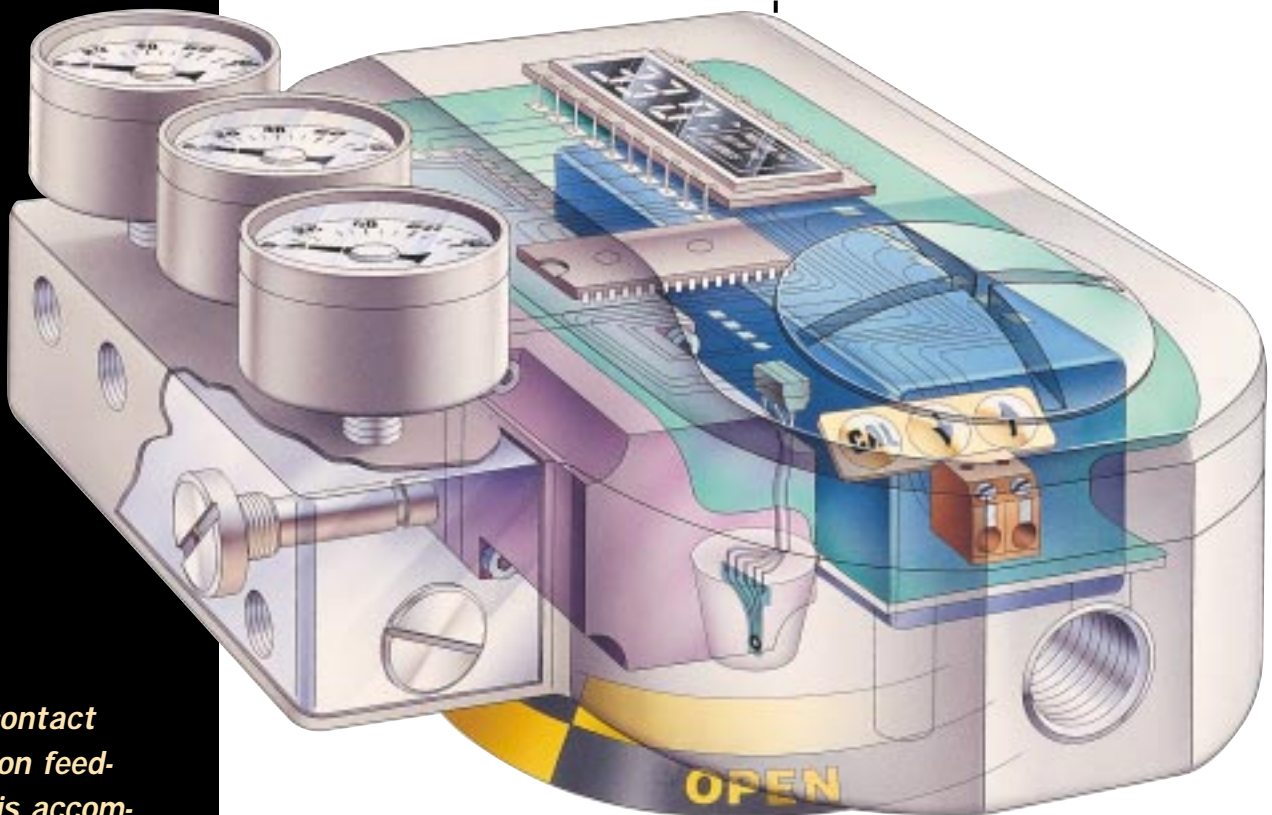


ICoT®

Proximity Positioner

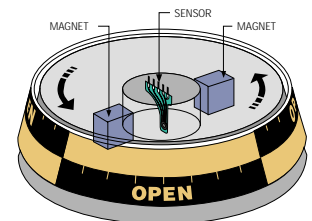
UNLIKE CONVENTIONAL POSITIONERS, THE ICoT POSITIONER FEEDS BACK VALVE POSITION WITHOUT THE NEED FOR LINKAGES OR LEVERS.



▶ *Non-contact position feedback is accomplished through the use of a proximity type solid state sensor*

Non-Contact Position Feedback

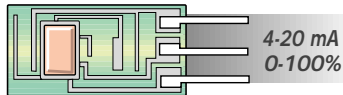
Unlike conventional positioners, the ICoT® (patent pending) feeds back accurate valve position without the need for linkages, levers, and rotary or linear seals. Position sensing is performed totally by non-contacting means, permitting use of advanced control strategies where knowledge of valve position is used in predictive and other algorithms.



The Advantages of Non-Contact Position Feedback

Integrated Position Transmitter

The ICoT[®] is available with an integrated 4-20 mA position feedback transmitter. This cost effective feature eliminates the requirement for the purchase of externally mounted devices when knowledge of valve position is required at a remote location



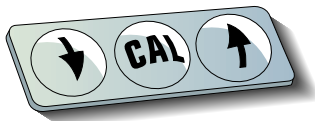
HART[®] Protocol

The ICoT[®] positioner responds to HART[®] commands for ease of calibration and provides intelligence for the control valve through a microprocessor based diagnostic system utilizing the HART[®] protocol. Accurate measurement of valve stem position, input signal, and actuator pressure offer operating personnel a real-time perspective on the state of control at the valve.



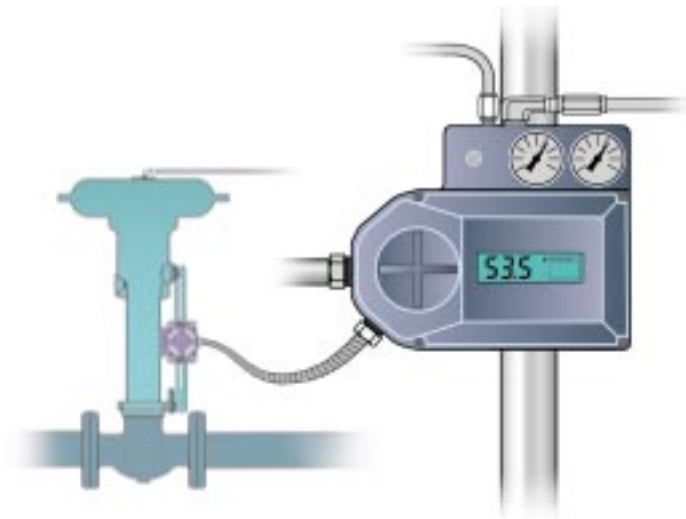
Intelligent Calibration, Local Keypad

ICoT[®] intelligent positioners are equipped with a HART[®] interface or a 3-button "membrane keypad" for performing on-site electronic calibration. The AutoCal feature allows for simple zero and span adjustments as well as PID and transducer calibration.



Remote Mount Capability

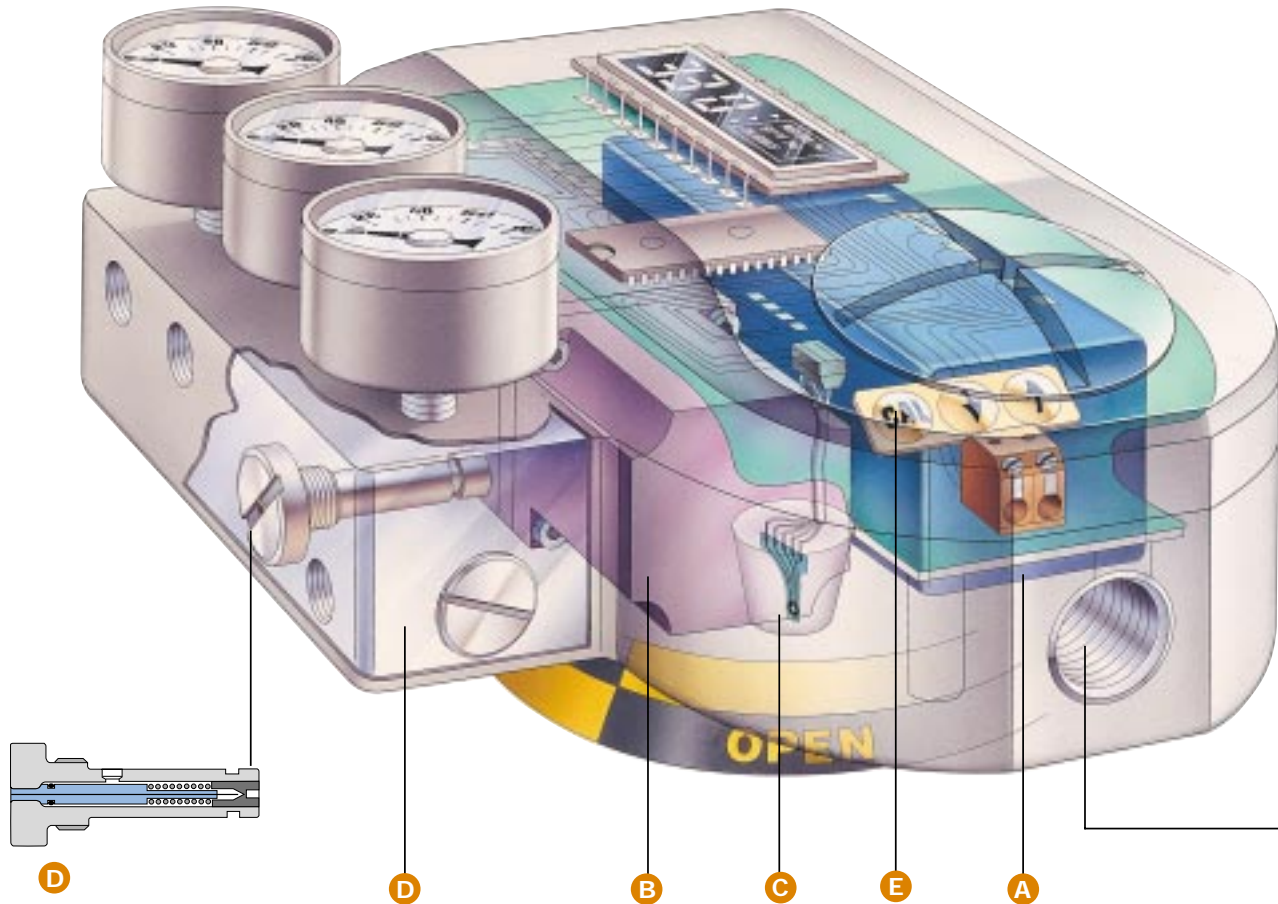
Since valve position feedback to the ICoT[®] positioner is accomplished by non-contacting means, the ICoT has the unique ability to be mounted remotely (up to a distance of 50 feet) from the device it is controlling. In the event the control valve is located in either a high vibration or extremely corrosive environment, the non-contact position feedback feature allows for isolated placement of the positioner.



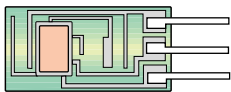
ICoT[®]

System Overview

- A** A microprocessor, housed within an environmentally sealed canister, performs position sensor linearization, AutoCal, characterization for valve type, PID control, autotuning, HART[®] information processing, and display management.
- B** An electropneumatic transducer, with internal diagnostic elements, converts the servo output signal into a pneumatic signal for directly driving valve actuators.
- C** Position feedback is accomplished by a non-contact Hall effect magnetic sensor. All rotary positioners are standardly equipped with a Beacon[®] position monitor.
- D** Air lines are connected to a machined aluminum manifold having gauges, filters, and a self-contained mechanism for cleaning the transducer orifice.
- E** For positioners not equipped with a HART[®] interface, a 3-button "membrane keypad" is provided for performing on-site electronic calibration.
- F** A standard hand-held terminal (the HART[®] Communicator) may be utilized for field operations in conjunction with a remote PC for maintenance information and documentation.
- G** A 32/64 channel HART[®] multiplexer provides diagnostic interfacing for multiple positioners.



OPTIONS AND ACCESSORIES



4-20 mA Position
Transmitter



Proximity Position Sensors



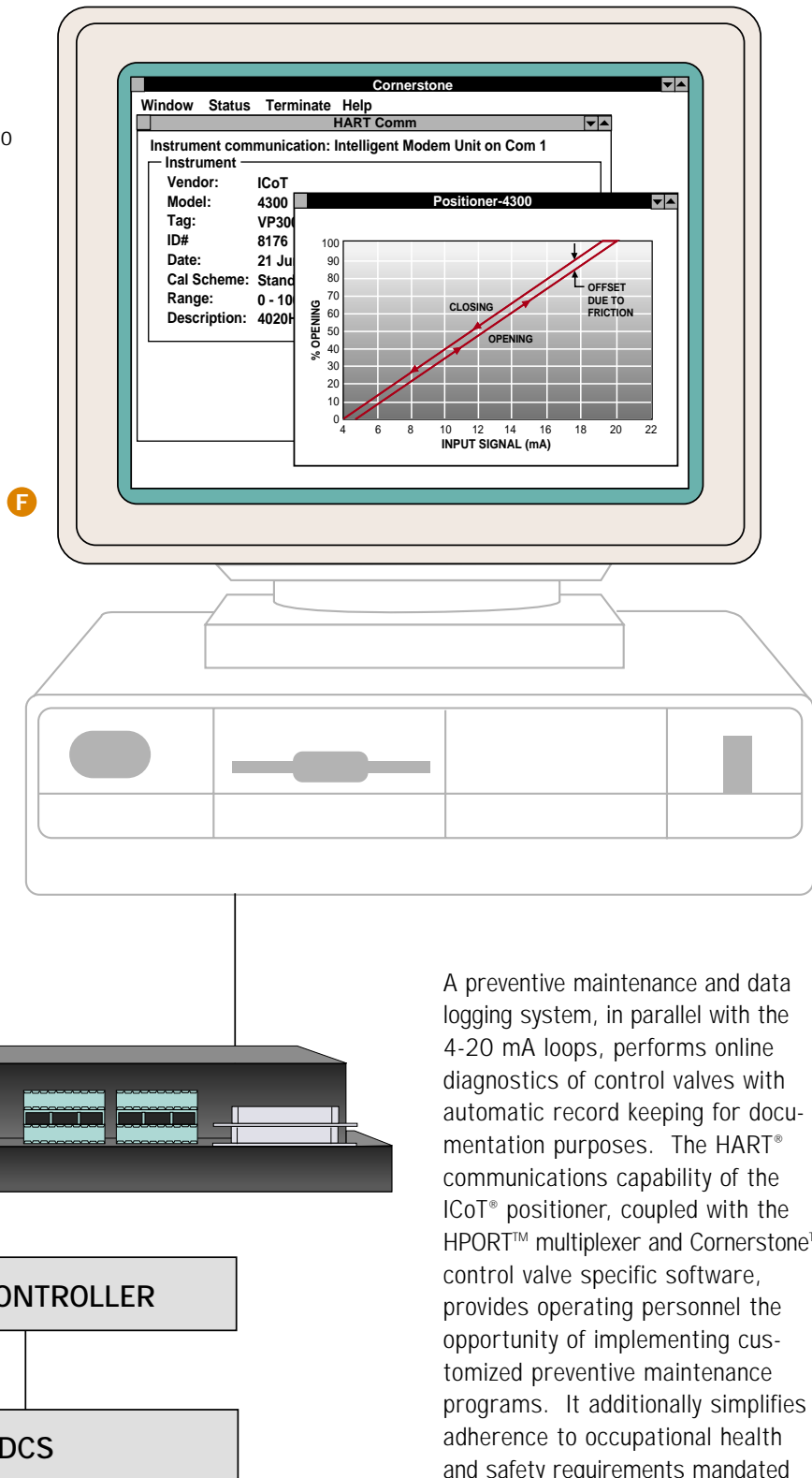
Solenoid Valves

ICoT[®]

System Overview

DIAGNOSTICS

Plant operating personnel are given a real-time perspective on the state of control at the valve, including a view into operating integrity and emerging alarm conditions. Early-warning diagnostic information is constantly being updated to assist production scheduling and maintenance personnel.



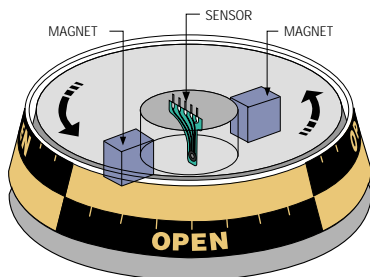
A preventive maintenance and data logging system, in parallel with the 4-20 mA loops, performs online diagnostics of control valves with automatic record keeping for documentation purposes. The HART[®] communications capability of the ICoT[®] positioner, coupled with the HPORT[™] multiplexer and Cornerstone[™] control valve specific software, provides operating personnel the opportunity of implementing customized preventive maintenance programs. It additionally simplifies adherence to occupational health and safety requirements mandated by government regulations.

ICoT®

Non-Contact Position Feedback

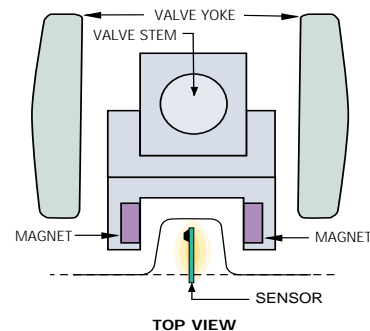
**ROTARY CONTROL**

Since valve position sensing is performed totally by proximity means, hysteresis within the positioner is non-existent. This feature allows for extremely accurate tracking of the control signal to within 1/10 of 1 mA. A non-contact position sensor, employing Hall Effect magnetic principles for position feedback, is embedded within the ICoT housing. An external magnetic module, attached to the output shaft of the actuator rotates about the Hall Effect sensor. An analog-to-digital converter interfaces between the position sensor and a microprocessor while also transmitting the incoming position command (instrument signal) to the microprocessor. Servo circuitry is then utilized for implementation of position control.

**LINEAR CONTROL**

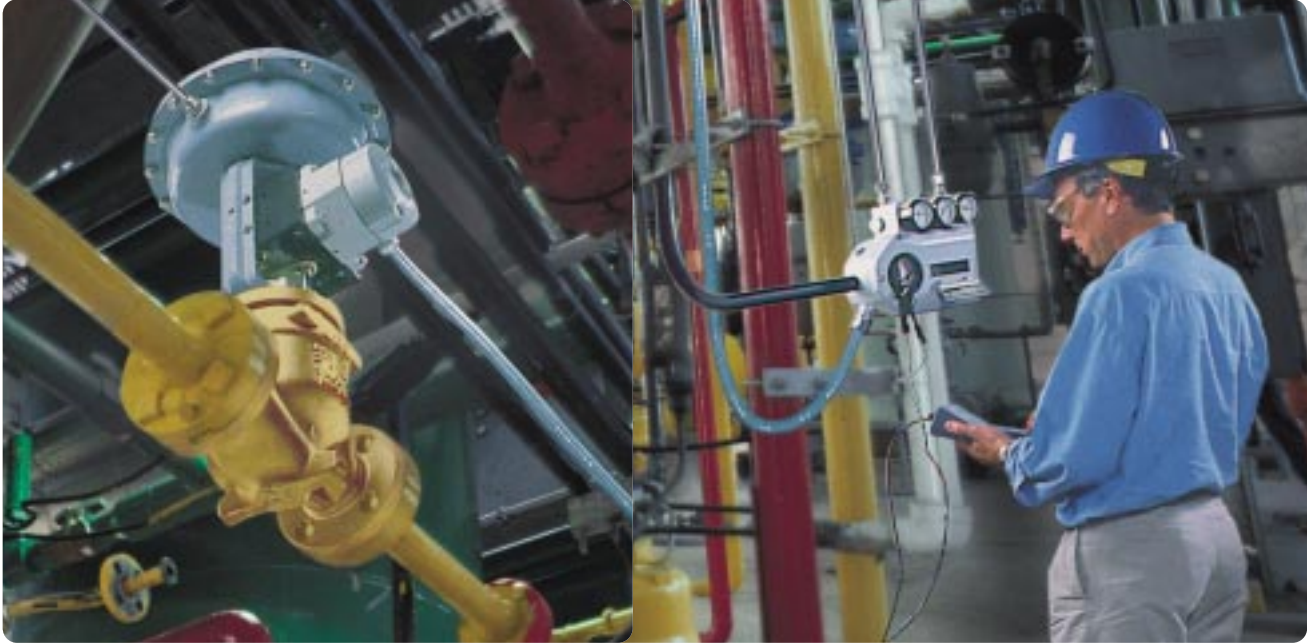
The ICoT proximity positioner represents a significant departure from previous attempts to reliably measure valve stem position. A static slide-by actuation assembly, attached to the valve stem, is the only "moving part" of the positioner. Position sensing is performed totally by non-contacting means. Output updating takes place twenty times per second. A microprocessor implements any alteration required to provide the equivalent of equal percentage, quick opening, or linear valve characteristics.

Output of the processor is the "setpoint" input for the servo amplifier circuitry, while the position sensor provides feedback. The position sensor output signal is also fed to the analog-to-digital converter permitting a wide range of diagnostic information to be generated.



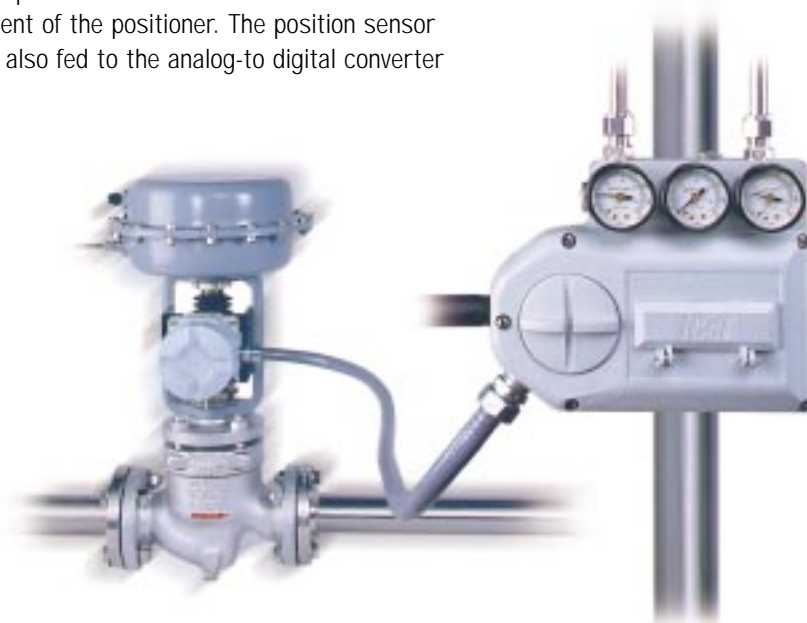
ICoT®

Remote Mount Capability

**REMOTE POSITION CONTROL**

The ICoT® is the only positioner capable of remotely controlling a process valve from up to a distance of fifty feet. Since valve position feedback is accomplished by non-contacting means, the ICoT proximity positioner has the unique ability to be mounted remotely from the device it is controlling. For applications where a control valve is located in either a high vibration or extremely corrosive environment, the non-contact position feedback feature allows for isolated placement of the positioner. The position sensor output signal is also fed to the analog-to-digital converter

housed within the positioner, thereby permitting a wide range of diagnostic information to be generated. From this information, conditions relating to excessive valve friction and the like, may be delineated. HART® information consisting of calibration data, current position, and various internal error conditions may be quickly retrieved due to the accessibility of the positioner.



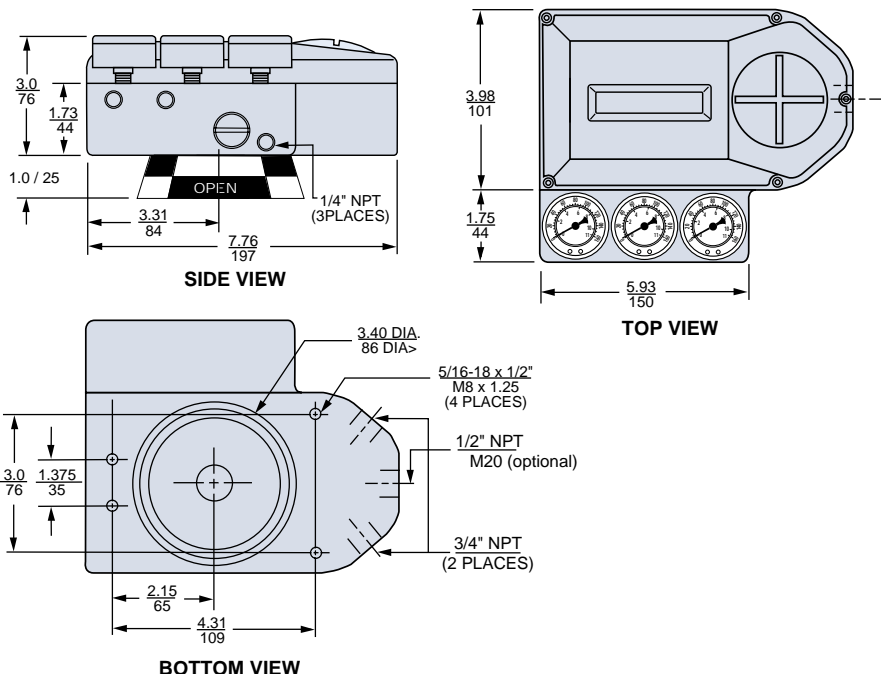
Dimensional Data

SERIES 4000 - Engineered Resin Enclosure (Dim. inches/mm)

Enclosure: Nema 4, 4X
Terminal Block: 8 Point Standard

Conduit Entrance: One 1/2" NPT Standard
1-1/2" & 2-3/4" NPT,

Optional
M20 or PG13.5 Optional



Westlock reserves the right to change product designs and specifications without notice, and is not responsible for errors and omissions.

Ordering Guide

