



ULTRONIC EPC

Electronic Process Controller

APPLICATIONS

ULTRATECH ULTRONIC Electronic Process Controllers (EPC) are designed to meet the special requirements of airflow and low pressure control applications. They provide a wide range of adjustability in both the proportional (gain) and integral (reset) control modes. They are unique in their use of an inverse derivative (rate) control mode which results in more stable control of airflow, duct static pressure, and room static pressure.



ULTRONIC EPC

EPCs are particularly applicable to the control of HVAC fan or combustion air flow rates, laboratory or clean room pressures, and dryer or furnace static pressures. For these applications, the inverse derivative control mode provides smoother control than the typical PID controllers.

DESCRIPTION

The EPC compares a current or voltage input signal from an electronic transmitter with a setpoint (local or remote) then, according to the setting of its PI 1/D control tuning, issues a current or voltage output signal to a control device. This control device, often a damper actuator or variable frequency drive, aligns the input signal with the setpoint.

The EPC is available with either automatic-compensating reset (Series A) or adjustable reset (Series B). With the Series A controller, the gain of the unit varies depending upon the control error. The Series B features the typical reset controller operation.

ULTRATECH controllers that accept remote setpoint signals still incorporate a setpoint adjustment that can be used to bias the incoming signal. This allows for control of a process variable that shows a constant difference from the setpoint variable, such as when return airflow is used for tracking supply airflow.

Most standard milli-amp or voltage signal ranges are available for output and input(s) of this controller. There is also a wide variety of options for power to the unit. See the Ordering Code for these standard options, or call ULTRATECH for other special power or signal ranges.

DESCRIPTION (CONTINUED)

Unless otherwise specified, the EPC includes the necessary DC power supply for all input and output signal loops. This allows it to be used with a 2-wire, loop-powered transmitter (such as ULTRASENSE EDPT) without the need for an additional power supply.

The controller electronics are enclosed in a 3.6"H x 1.75"W x 3.31"D aluminum housing with clearly labelled terminals for power, output, and input connections. This thin unit, with all adjustments and connections on one end, allows for dense mounting in either a control panel supplied by ULTRATECH or a pre-existing panel. When supplied in an ULTRATECH control panel, the EPC will be completely wired as required by the specified sequence of operations. Separate terminals will be clearly labelled and easy to access through the standard conduit holes provided.

SPECIFICATIONS

PROPORTIONAL BAND: 1 to 100%
INTEGRAL (RESET) RATE: 0.5 to 2.0 repeats per minute
INVERSE DERIVATIVE TIME CONSTANT: 10 seconds to 17 minutes
HYSTERESIS AND DEADBAND: Not measurable
REPEATABLE: Better than 0.01% full scale
LOCAL SETPOINT RANGE: 0 to 100%
REMOTE SETPOINT BIAS: +/- 0 to 50%
MAXIMUM OUTPUT LOAD: 1000 OHM

ORDERING INFORMATION

ULTRONIC EPC- - - - -

SERIES _____
A - Auto-compensating reset
B - Adjustable reset rate

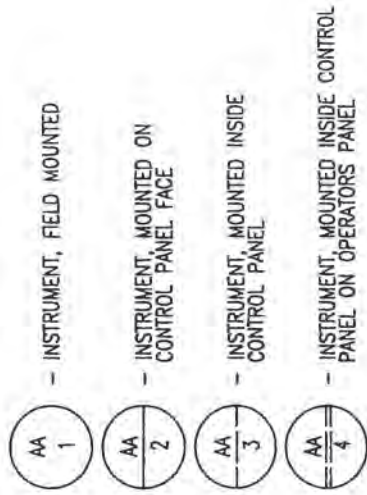
POWER _____
A - 115 VAC
B - 220 VAC
C - 24 VAC
D - 24 VDC

OUTPUT _____
A - 4-20 mADC
B - 0-10 VDC
C - 0-5 VDC
Z - Special (specify)

PROCESS INPUT _____
A - 4-20 mADC
B - 0-10 VDC
C - 0-5 VDC
Z - Special (specify)

SETPOINT _____
L - Local (blind adjustment on unit)
R - Remote (specify if different signal range than process input)

ACTION _____
D - Direct (varies with process)
R - Reverse (varies with setpoint)

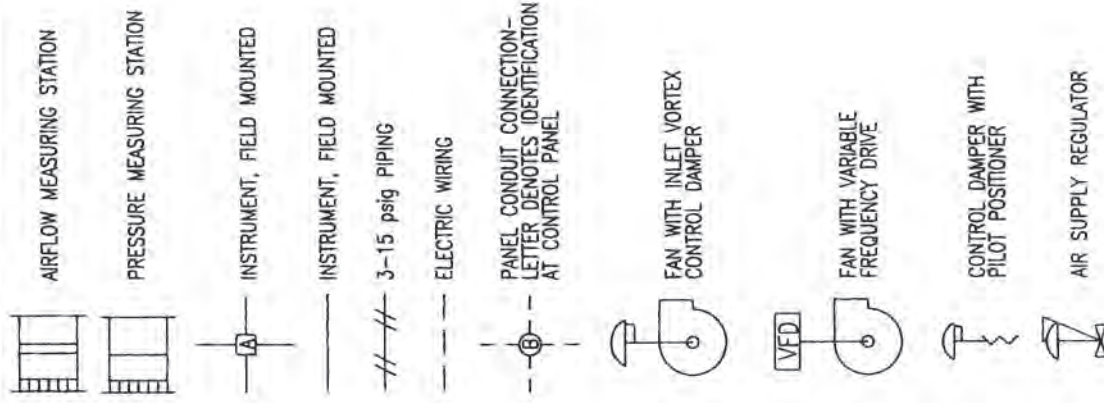
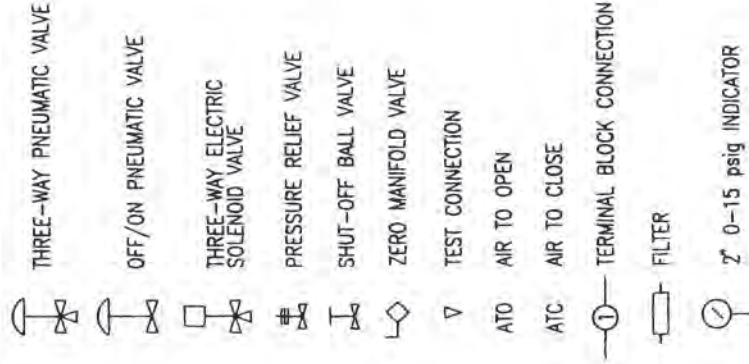


INSTRUMENT DESIGNATORS

- FI — FLOW INDICATOR
- FT — FLOW TRANSMITTER
- FC — FLOW CONTROLLER*
- FY — FLOW COMPUTING RELAY*
- PI — PRESSURE INDICATOR
- PT — PRESSURE TRANSMITTER
- PC — PRESSURE CONTROLLER*
- PY — PRESSURE SWITCH, ELECTRIC
- HC — PRESSURE COMPUTING RELAY*
- SP — HAND CONTROL
- FN — SETPOINT
- VOU — FILTER
- LCD — VOLUME TANK
- AM — LIQUID CRYSTAL DISPLAY
- AM — ANALOG METER
- GND — GROUND

*RELAY FUNCTION DESIGNATORS

- A+B=C — TOTALIZING
- √ — SQUARE ROOT EXTRACTOR
- Y : X — FLOW CHARACTERIZING, RATIO
- > — HIGH SELECT
- < — LOW SELECT
- PI — PROPORTIONAL, INTEGRAL, RESET
- AS1 — PLUS INVERSE DERIVATIVE
- AS2 — PRIMARY AIR SUPPLY 30-150 psig
- ▲ — FILTERED, 20 psig AIR SUPPLY
- — INSTRUMENT AIR CONNECTION

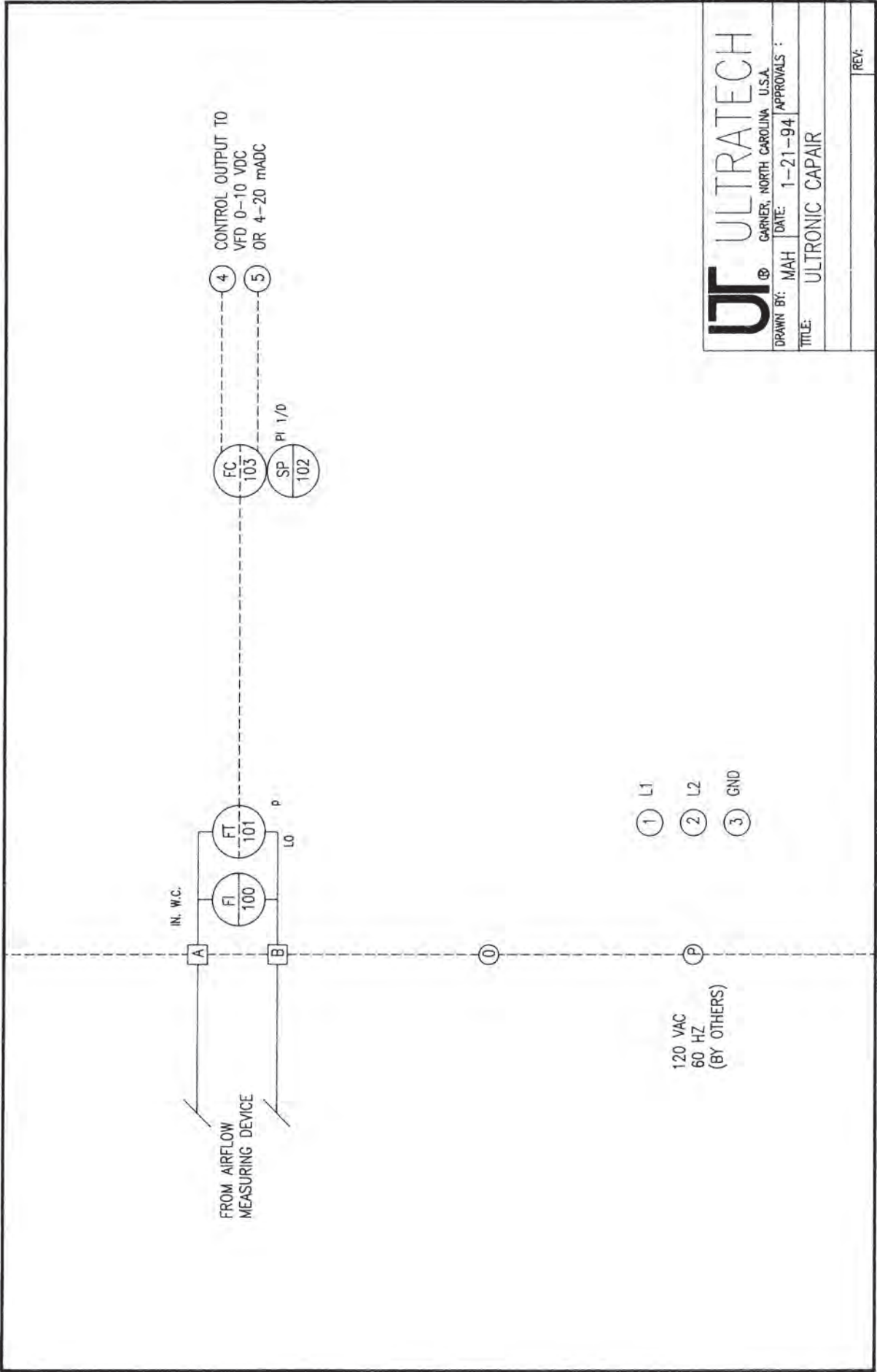


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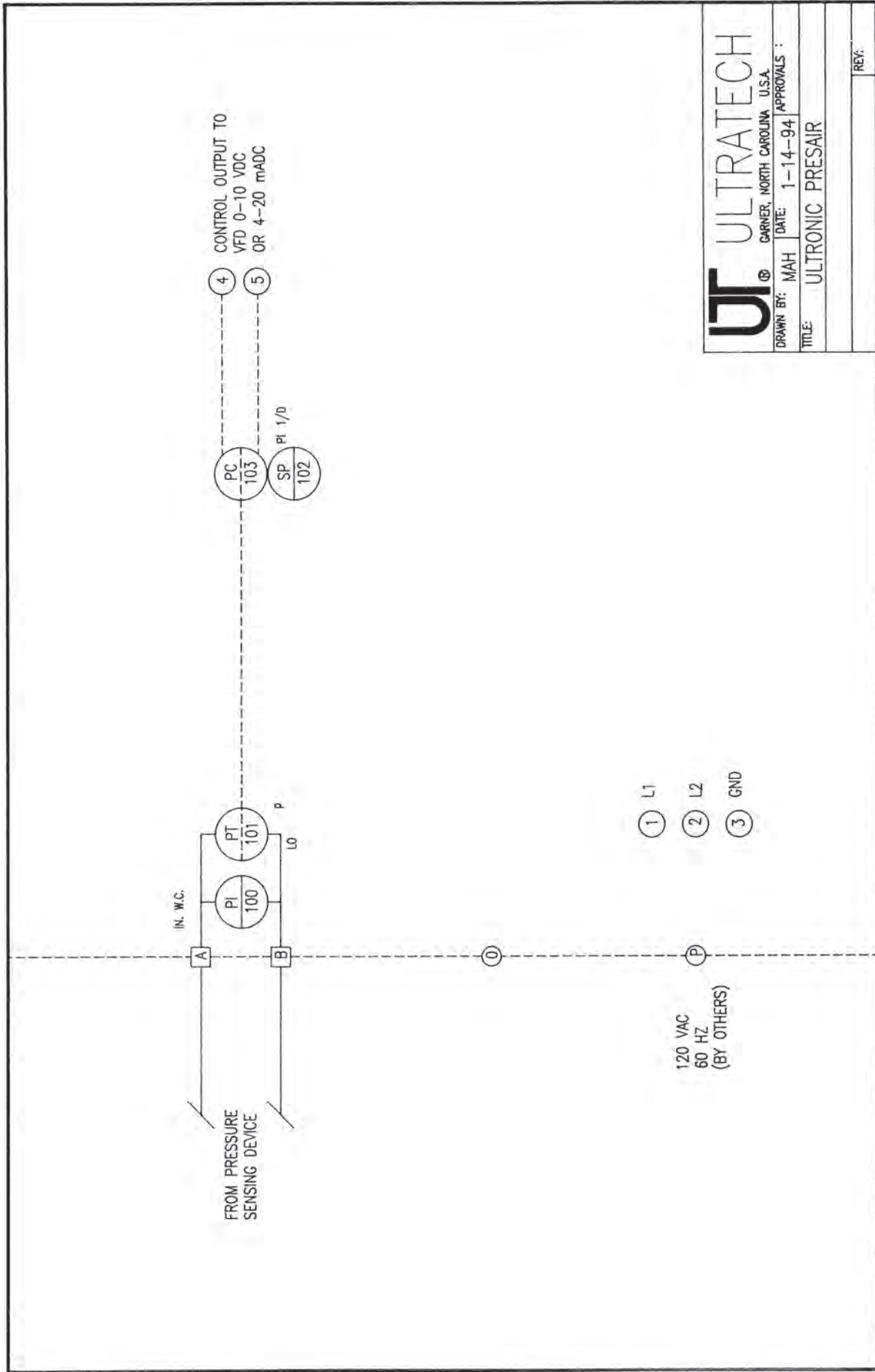
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 TITLE: ULTRONIC PRESAIR

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