ATC880 Process Controller

1/4 DIN Auto-Tuning Control and Display of Process or Differential Pressure

Features

- Auto-tuning control in a discrete 1/4 DIN package
- Display and control differential pressure is available
- Easily configure locally or remotely by optional Modbus without jumpers
- Two assignable alarms, third alarm optional
- Bright, dual 5-digit LCD with bar graph display
- Digital security to prevent unauthorized use
- IP65/NEMA 4X rated for harsh environments

Description

The ATC880 is a compact 1/4 DIN auto-tuning process controller that employs an acclaimed PID algorithm. The ATC880 is a cost-effective way to control a single process parameter, such as for a plastics extruder. Reliably auto-tune and alarm on strain gage, DC voltage or current inputs. The ATC880 can also control differential pressure when an optional secondary strain gage input is used. The bright 5-digit LED is accompanied by a helpful, quick view 35-segment analog bar graph. Other useful display information includes alarm set points, peak values, error conditions, and engineering unit beacons. The ATC880 is easily field-configured or programmed remotely via optional Modbus/Jbus without annoying mechanical jumpers. An optional 24Vdc input supply is also available.
**Specifications**

**PERFORMANCE CHARACTERISTICS**
- **Instrument Type:** Digital, panel-mount PID closed loop controller
- **Display:**
  - 5 red LED digits 0.52" (13.2mm) high
  - 5 green LED digits 0.44” (11.3mm) high
  - 35-segment bar graph scaled to value
- **Accuracy:** ±0.1% full scale
- **Sampling Time:** 50mS, typical

**INPUT**
- **Input:**
  - Strain gage or linear (Vdc, mA)
  - **Strain Gage:** 350 to 5000Ω, 1 to 4mV/V, excitation 10V ±7%
  - **Linear Input:**
    - 0 to 5Vdc and 0 to 10Vdc,
    - 0 to 20mA and 4 to 20mA
- **Input Signal:**
  - -25 to 125% full scale
- **Input Impedance:**
  - <10Ω for linear current input
  - >165kΩ for linear voltage input
- **Shunt Calibration:**
  - With or without resistor (40 to 100%)
- **Digital:**
  - 1 programmable voltage-free contact closure
  - Optional: 4 opto-isolated for control

**ALARM OUTPUTS**
- **Alarm Type:** SPDT 2A max @ 240Vac resistive load
- **Alarm Number:** 3 standard
- **Alarm Update Time:** 50mS, typical

**OUTPUTS**
- **Type (Retransmission):** 0-5Vdc and 0-10Vdc; 0-20mA and 4-20mA
- **Type (Control):**
  - 0-5Vdc, -10/+10Vdc, and 0-10Vdc;
  - 0-20mA and 4-20mA

**Resolution:** ±0.1% of output span

**Accuracy:** ±0.1% of output span

**CONTROL FUNCTION**
- **Type:** PID with integral preload and anti-reset windup with an adaptive auto-tuning algorithm

**SERIAL COMMUNICATION INTERFACE**
- **Type:** Isolated RS-485
- **Protocol:** Modbus RTU/Jbus, selectable

**MECHANICAL & PACKAGING CHARACTERISTICS**
- **Termination:** Screw terminals on rear with safety covers
- **Front Panel:** IP65/NEMA 4X with gasket
- **Operating Temp:** 32 to 122°F (0 to 50°C)
- **Storage Temp:** -4 to 158°F (-20 to 70°C)
- **Humidity:** 85% relative humidity, non-condensing
- **Weight:** 1.43 lbs. (650g)

**APPROVALS & CERTIFICATIONS**
- **CE Mark:** Self-certified to applicable standards
- **Agency Approvals:** UL, cUL

**POWER SUPPLY (MAINS)**
- **Input Power:** 100 to 240Vac, 50/60Hz switching
- **24Vac/dc option available**
- **Power Consumption:** 15VA, max
- **Transmitter Supply:** 24Vdc for 2-or 4-wire mA transmitters

**Ordering Guide**

ATC880-X-X-X (Process Controller + Strain Gage or mA/V input + 3 Alarms + Analog Control Output)

- **External Set Point:**
  - 0 = No External Set Point
  - 1 = Analog Remote Set Point or Secondary Input for Differential (selectable)

- **Options:**
  - 2 = 24Vdc Auxiliary Power Supply + Analog Retransmission
  - 3 = 24Vdc Auxiliary Power Supply + Analog Retransmission + RS-485 + 4 Digital Inputs

- **Power Supply:**
  - 3 = 100 to 240Vac, Switching
  - 5 = 24Vac/dc, Switching

Shaded sections refer to standard configurations that are offered.

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