

**1/16 DIN controller with adaptive tuning... provides optimum performance even under changing process conditions**

The Dynapar brand T506 is a full PID controller with adaptive tuning which enables the T506 to continually alter its PID constants to quickly respond to changes in load, set-point or overall system variations - all without any operator involvement.

Its universal input feature allows one unit to be configured to accept a variety of thermocouples, as well as RTD and analog inputs.

Versatility is further increased by plug-in outputs. A total of three outputs are possible and can be configured as one control with two alarms or dual control outputs with one alarm for use in heat/cool applications.

- Pre-Tune & Adaptive Tune Algorithms combine to optimize PID constants and provide tight control
- Universal Inputs for use in a wide variety of process applications
- Plug-in configuration of outputs 2 and 3 provides for field expandability
- NEMA 4/IEC IP65 Rated Front Panel for use in washdown environments
- RS-485 Communication allows interfacing to a PLC or other host
- Loop-Break Alarm gives early detection of control element failure
- Ramp to SP feature for precise control on start-up
- 250 ms Sample Rate allows control of fast reacting processes
- Multi-Level Security prevents unauthorized parameter changes
- All Programming done through the front panel for quick setup

Communication capability can be used to enhance plant-wide automation by using an RS-485 link to interface to a supervisory system or to a chart recorder with the retransmission output.

A universal AC power supply (94-264) meets global power requirements, while the NEMA 4/IEC IP65 rated front panel provides reliable operation in harsh environments.

## SPECIFICATIONS

### Inputs:

**Thermocouple:** Types: R, S, J, K, L, T and B.

**RTD:** Three-wire PT100, DIN 43760.

**Process:** 0-20mA, 4-20mA, 0-50mV, 10-50mV, 0-5V, 1-5V, 0-10V, 2-10V.

**Sample Rate:** 250ms.

**Accuracy:**  $\pm 0.25\%$  of Full Scale  $\pm 1$  LSD

**Resolution:** 14 bits approximately.

### Outputs:

**Relay:** Contact Type: SPDT; Rating: 2A resistive at 120/240 VAC.

**SSR Drive:** Drive Capability: SSR > 4.3 VDC into 250 ohm minimum.

**DC:** Field Configurable Ranges: 0-20mA, 4-20mA, 0-10V and 0-5V; Resolution: Eight bits in 250ms, 10 bits in 1 second typical.

### Control:

**Modes:** ON/OFF, PID, Manual.

**Proportional Band:** 0 (Off), 0.5% - 999.95% of Full Scale.

**Reset Time (Integral):** 1 sec - 99 min 59 sec, and Off.

**Rate Time (Derivative):** 0 (Off) - 99 min 59 sec.

**Cycle Times:** 0.5 sec - 512 sec in binary steps.

**ON/OFF Hysteresis:** 0.1% - 10% of Full Scale.

### Alarms:

**Maximum Number:** Two "soft" alarms plus Loop Alarm.

**Maximum Number of Outputs:** Up to 2 for alarm purposes.

**Combinational Alarms:** Logical OR or AND of alarms to a physical output.

### General:

**Front Panel Rating:** NEMA 4/IEC IP65.

**Supply Voltage:** 90 - 264 VAC, 50/60 Hz.

**Common Mode Rejection:** 120 dB at 50/60 Hz.

**Series Mode Rejection:** >500% of span at 50/60 Hz.

**Terminals:** Screw Type - combination head.

### Ordering Information:

#### Input Configuration\*

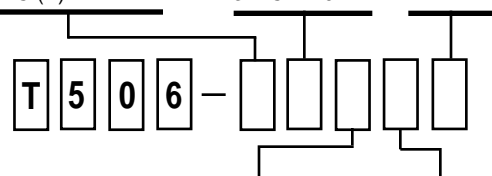
- 1 RTD or DC (mV)
- 2 Thermocouple
- 3 DC (mA)
- 4 DC (V)

#### Output 1

- 0 None
- 1 Relay
- 2 SSR Driver
- 3 DC: 4-20 mA\*\*

#### Options

- 0 None
- 5 RS-485



\* Can be reconfigured in the field

\*\* For control output only

\*\*\* For retransmission only

#### Output 2

- 0 None
- 1 Relay
- 2 SSR Driver
- 3 DC: 4-20 mA\*\*

#### Output 3

- 0 None
- 1 Relay
- 2 SSR Driver
- 3 DC: 4-20 mA\*\*\*

### Dimensions:

