TRANSPAK™
T287
Programmable Isolating
Universal Input 2-Wire Transmitter

Provides an Isolated, Linearized Current Loop in Proportion to a Thermocouple, RTD, Millivolt, Potentiometer or Resistance Input

CE

- ■ Universal Input Reduces Inventory Levels
- ■ Eliminates Ground Loops
- ■ Supports Single or Dual Inputs

- ■ User-Friendly Configuration
- ■ Custom Linearization for Special T/C Types
- ■ DIN Rail Mounting Adapter Included

Description

The T287 is a programmable two-wire transmitter that is configured to provide an isolated 4-20mA signal in proportion to the input signal. The T287 accepts thermocouple, 2-wire, 3-wire, or 4-wire RTD, potentiometer, resistance and millivolt inputs. The T287 supports either single or dual inputs. In the dual input mode, either input can be selected to control the output, or math functions can be applied in which both inputs have an effect on the output. The functions available are Sum, Difference, Average, Higher of the two or Lower of the two inputs. Typical applications include providing accurate, stable signals to distributed control systems (DCS), supervisory control and data acquisition systems (SCADA), environmental monitoring and control systems (EMCS), data acquisition and control systems (DACS) and custody transfer/ pipeline systems.

Configuration is performed by connecting the transmitter to a standard (9-pin RS-232) PC serial port using an isolated interface adapter, and running a user-friendly Windows-based program. All of the configuration information can be defined and modified using only a PC, the interface adapter, and the transmitter. No loop supply, input simulation or meter on the output is required. The fully isolated adapter reduces the risk of damage to the PC which can be caused by spikes and surges on field wiring entering the computer via its unprotected serial port.

The T287 yields higher accuracy and long-term stability with lower power consumption than prior generation transmitters. The T287 automatically performs self-tests and auto-calibration while in service, resulting in a stability of better than ±0.1% of span over 12 months.

Operation

Every T287 is factory calibrated and can be configured to perform the desired function using the Device Configuration screen and the Sensor Selection Screen. Just fasten the DB-9 connector to the computer's serial port and the keyed 6-pin connector to the port under the access cover on the top of the transmitter. There is no need to provide an external power supply and load to the T287's output to configure the transmitter.

Units already in service can have their configuration "up-loaded" to the PC. Their operating parameters can be reviewed, and if necessary, revised and downloaded again. All configuration parameters can be stored in a configuration file on the PC for future use. The Configuration & Calibration Software, Isolated RS-232/ T287 Communications Adapter and User's Guide are included in the model C680-0001. A zero and span trimmer (model C680-0002) is also available which allows users to adjust the zero and span without connecting a PC. Just plug the trimmer into the programming port and press the up or down button.

Specifications

Input Types:

Thermocouples:

Most standard types & all special types using customer defined tables & polynomials.

RTD:

2-, 3- & 4-wire, Pt-100, Ni-110, Ni-120 & other RTDs. Includes Callandar-Van-Dusen adaptation and custom sensors linearization with user defined tables and polynomials.

DC mV: -10 to 100mV

Potentiometers: 0 to 20k Ohms

Resistance: 0 to 400 Ohms

General Specifications:

Minimum Range: 2mV

Output: 4-20mA

Supply Voltage: 9-40VDC @ no load, reverse polarity protected

Maximum Load:

$R_{max} = (V_{supply} - 9V) / 20mA$

Operating Temperature:

-40 to 85°C

Storage Temperature:

-55 to +125°C

Humidity:

0 to 95% RHNC

Response Time:

0.3 seconds, to 90% of input (>3 updates/sec)

Damping Factors:

Programmable 0 to 64 seconds, to 0 to 120% of input range, using config software

Stability:

Better than ±0.1% of span for 12 months

Isolation:

2000VDC, input to output

RFI Protection:

<1% effect of span at 20-1000MHz and at field strength of 20V/m

Performance Specifications:

Output Resolution:

0.015% of span (2.5uA)

Output Linearity (D/A):

Better then 0.02% of output span

Sensor Linearization:

Better than 0.1°C for RTDs

Better than 0.2°C for Thermocouple

Cold Junction Compensation:

Automatic to within ±0.7°C for all thermocouples

Temperature Stability:

0.015%/°C combined zero and span.
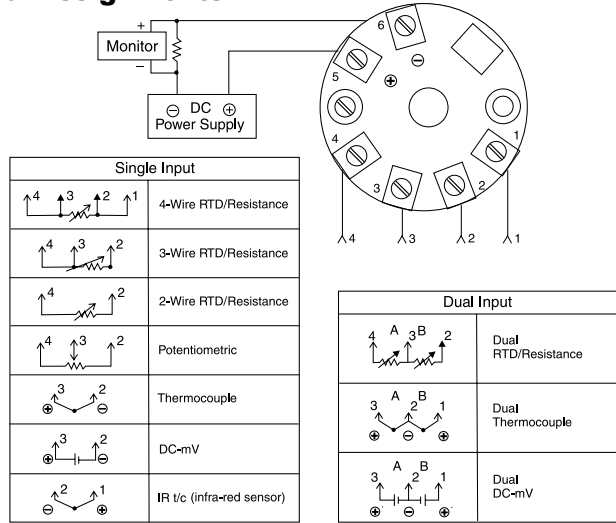
Supply Voltage Effect:

< ±0.003% per volt.

Calibration:

Automatic, unit includes all calibration parameters. The unit performs periodic zero and span self-test, and auto calibration.

Input Linearity:

Better than 0.01% of span (mV input)

Terminal Assignments

Note that detailed installation instructions are available on our website.

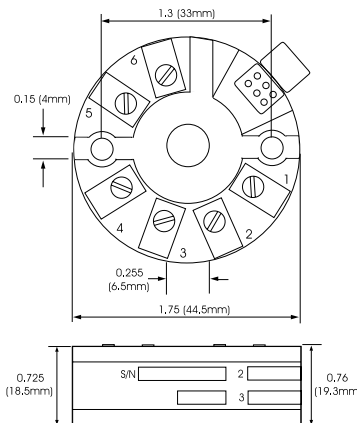### Ordering Information

Models & Accessories

Specify:

1. Model: **T287-0000**
2. Model: **C680-0001** Isolated Communications Adapter, Configuration and Calibration Software, and User's Guide.
3. Model: **C680-0002** Zero/Span Trimmer.

Accessories

AP9046	Action Pak 24/40VDC, 65mA Loop Power Supply
V560/565	3-1/2 digit remote loop powered indicator with wide ranging display.
T25H-0000	Head Mount Enclosure - 1/2 NPT for Thermowell and Conduit.

Dimensions

Head Mount Enclosure

Factory Assistance

For additional information on calibration, operation and installation contact our Technical Services Group:

703-669-1318

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