

## Multivariable Trip Switch for Smart Transmitters

### DESCRIPTION

The **Multivariable Trip Switch (MTS)** supplies a stand-alone safety shutdown solution that can range from simple shut-off of a pump or motor to part of a larger system solution. **MTS** works with Honeywell *Smartline*™ field instruments or with any analog instrument to provide a configurable high or low trip. A second relay and one analog repeat output are optionally available.

The **MTS** is compatible with all Honeywell *Smartline* transmitters, including the SMV 3000 Smart Multivariable Transmitters, ST 3000 Smart Pressure Transmitters, SCM 3000 Smart Coriolis Mass Flowmeters, STT 3000

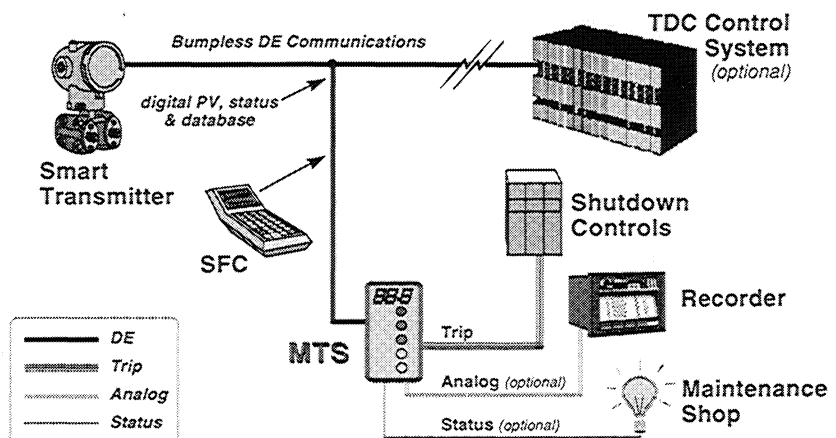
Smart Temperature Transmitters, the SGC 3000 Smart Gas Chromatograph, and MagneW 3000 and MagneW 3000 PLUS Smart Flowmeters. In addition, **MTS** works with any of Honeywell's DE control system interfaces (STDC, STI-MV). Honeywell's hand-held communicator, the SFC Smart Field Communicator, and the PC-based SCT 3000 Smart Configuration Toolkit may be used with **no** disturbances to the analog repeat output or status.

The **MTS** may be installed without disconnecting or disrupting the existing installation and may be used stand-alone or as an addition to an integrated control solution.

### BENEFITS

- Zero-error digital PV trip.
- One model with DE or ANALOG 4-20ma. input capability.
- Eliminates false process shutdowns by isolating xmtr status from PV trip.
- Leverages wiring savings associated with multivariable transmitters via individual trips on any PV.
- Enables full digital, non-bumping communications for any application.
- Enables use of pressure transmitter replacement for pressure switches.
- Expands functionality while maintaining full digital integration.

#### *Trip Switch Application with Maintenance Indication, Analog Repeat and Digital Integration ...*



### SAFETY SYSTEM ADVANTAGES

The **MTS** provides a cost effective zero-error digital shutdown solution. The independent "smart status" output enhances the speed safety shutdown systems are able to respond by tracking the transmitter's status. "Smart status" also eliminates the need for separate Hi/Hi and Lo/Lo trips. The **MTS** fully supports forced I/O manual mode for validation testing of safety shutdown system.

Multiple **MTS**s may be used with the same transmitter.

### COMPATIBILITY

The **MTS** is fully compatible with all Honeywell DE products, all 3rd party DE products and commercially available "smart" safety barriers.

### OTHER ADVANTAGES

- ◆ Transmitter status may be isolated from trip action.
- ◆ Enables non-bumping communications.
- ◆ Does NOT require special configuration tools.
- ◆ No calibration required.

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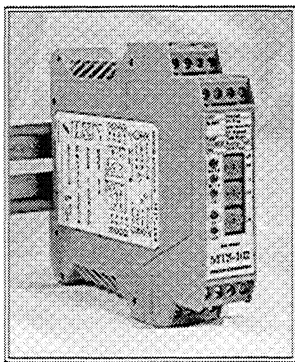
## HOW IT WORKS

The **MTS** works by monitoring a single transmitter's digital PV/SV or analog 4-20ma. signal and comparing its value with the configured trip point. With a DE signal, the **MTS** also provides an independent "smart status" derived from the constantly monitored digital transmitter's status and the **MTS** module status. The "smart status" may be OR'ed with the PV/SV trip state.

The compact module design is suitable for DIN rail mounting and is intended to be mounted within an appropriate enclosure. The **MTS** operates from a single +24VDC source and is internally short-circuit protected. All connectors are screw compression type and removable.

## FEATURES

- ◆ Trip on DE or ANALOG signals.
- ◆ 0 to 99.9% trip range.
- ◆ 1 or 2 relays, 5A @ 240VAC.
- ◆ Independent configurable transmitter status relay for both DE and analog inputs.
- ◆ Optional analog repeat output with BOL/BOH/LKG.
- ◆ "Smart status" LED indicator.
- ◆ Configurable forced I/O manual mode action.
- ◆ Compatible with 4 or 6 byte DE protocol modes.
- ◆ Modular DIN rail mount.
- ◆ Test mode.



	DIGITAL INPUT	ANALOG INPUT
Trip Error	0	±1.0%
Resolution	16 bits	8 bits
Hysteresis	0.25%	2%
Response Time	25 msec.	60 msec.
Analog Repeat Out	YES	NO
MV Capability	YES	NO
Indep Xmtr Status	YES	YES
SV Temp Capability	YES	NO
Bumpless Comm	YES	NO

## Specifications:

# Inputs:	1
Input Types:	(DE) (Analog) Honeywell DE, 4 or 6 byte, multivariable broadcast formats A thru F [listen only] 4-20mA. (or 1-5 volts into 250Ω)
Input (Loop) Loading:	DE: 10 Kohms, min.
DE PV/SV Selection:	PV1, PV2, PV3, PV4 or SV1 (switch configurable)
Trip Range:	0 to 99.9%, in increments of 0.1%, LOW or HIGH
Trip Error:	DE input: Zero, Analog input: ±1.0%
Trip Point Hysteresis:	DE input: 0.25%, Analog input: 2%
Throughput Delay:	DE input: 25 msec., Analog input: 60 msec., max.
Relay(s):	(Type) (Action) 1 Form A and 1 Form B, 5A @ 24VAC/DC, 120/240VAC Relay energized when not tripped and "smart status" = good. [independent STATUS relay is optional]
Analog Repeat Output:	[optional] 1 @ 1-5 volts, nom. ± 0.045% F.S., into 10 Kohms load, min. [higher accuracies available]
"Smart Status":	Transmitter status, forced I/O manual mode <sup>1</sup> , DE signal integrity, MTS test mode and MTS fault.
LED Indicators (5):	HIGH/LOW RELAY #1 DE STATUS Yellow: <u>ON</u> indicates configured HIGH or LOW trip selection. <u>BLINKS</u> when tripped. Green: <u>ON</u> when NOT tripped (relay energized) and "smart status" = good. Green: <u>ON</u> when DE signal is present. Red: <u>OFF</u> when NOT tripped and "smart status" = good. <u>BLINKS</u> when tripped, "smart status" = bad. <u>ON</u> steady for MTS fault.
Test/Validation Mode:	Trips relays (de-energized), LEDs indicate BAD status, analog output forced to 3.00 volts
Field Communicator Interaction:	DE input: No impact to trip state. PV/SV/Status may be delayed due to interleaved communications.
Power Supply:	+18VDC to +30VDC, +24VDC nom. @ 80mA. typ (excludes transmitter)
Connectors:	Screw type, compression, removable, keyed
Module Size:	Approx. 4.5"(H) x 0.88"(W) x 3.9"(D)
Operating Temperature:	0°C to +60°C, ambient
Mounting:	35mm DIN rail (top hat, EN50022)

Note 1: Response action is user configurable.

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