

Multivariable Trip Switch for Smart Transmitters Specifications

34-MV-03-02 December 1999



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*TM 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.

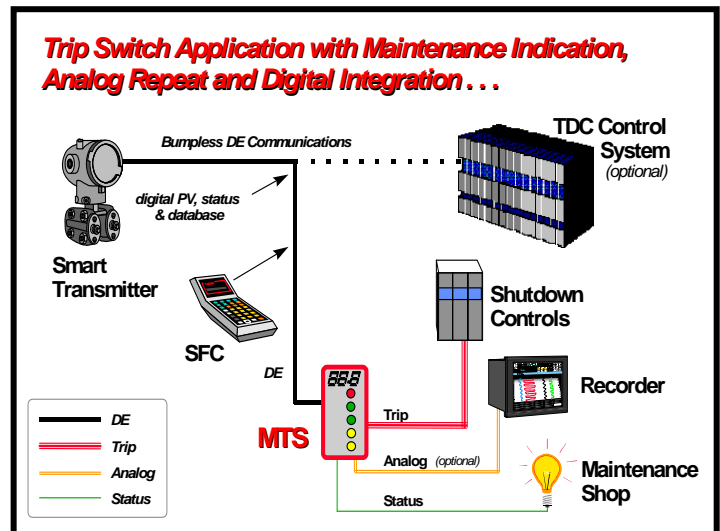
The **MTS** is compatible with all Honeywell *Smartline* transmitters, including the SMV 3000 Smart Multivariable Transmitters, ST 3000 Smart Pressure Transmitters, SCM 3000 Smart Coriolis Mass Flowmeters, STT 3000 Smart Temperature Transmitters, the SGC 3000 Smart Gas Chromatograph, and MagneW 3000 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.
- Eliminates false process shutdowns by isolating xmtr status from PV trip.
- One model with DE or ANALOG 4-20ma. input capability.
- Leverages wiring savings associated with multivariable transmitters via individual trips on any PV.
- Enables full digital, non-bumping communications for any application
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- Expands functionality while maintaining full digital integration.
- NO calibration or special configuration tools are required

Figure 1



Safety System Advantages

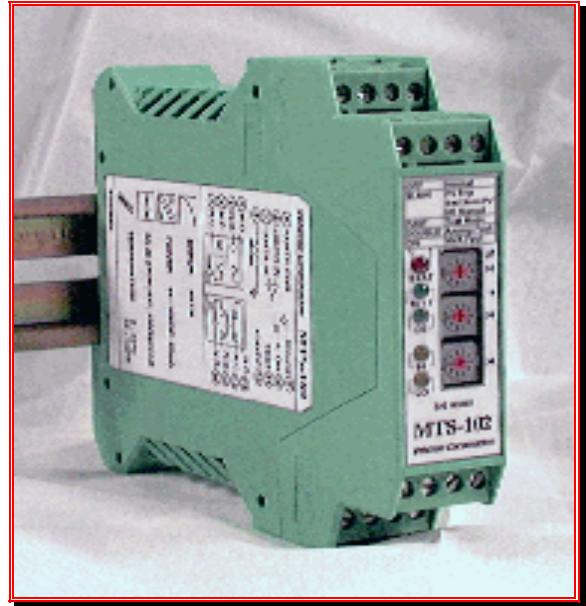
The **MTS** provides a cost effective zero-error digital shutdown solution. The independent "smart status" output enhances the speed safety shutdown systems are able to respond by tracking the transmitter's status. "Smart status" also eliminates the need for separate Hi/Hi and Lo/Lo trips. The **MTS**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

How it works

MTS monitors a single transmitter's digital PV/SV or analog 4-20ma. signal and compares its value with the configured trip point. With a DE signal, **MTS** also provides an independent "smart status" derived from the digital transmitter's status and **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. **MTS** operates from a single +24VDC source and is internally short-circuit protected..

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	25msec.	60msec.
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 [<i>listen only</i>] 4-20mA. (or 1-5 volts into 250Ω)
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):	1 Form A and 1 Form B, 5A @ 30 VDC, 250 VAC, 0.1HP
Analog Relay Output [<i>Optional</i>]	1 @ 1-5 volts, nom. ± 0.045% F.S., into 10 Kohms load, mm. [<i>higher accuracies available</i>]
“Smart Status”:	Transmitter status, forced I/O manual mode, DE signal integrity, MTS test mode and MTS fault.
LED Indicators (5):	HIGH, LOW, STATUS, RELAY, DE
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. 4.51”(H) x 0.89”(W) x 3.9”(D)
Operating Temperature	0°C to +60°C, ambient
Enclosure/Mounting	IP20 / 35mm DIN rail (EN50022) mounted equipment
CE Conformity (Europe): Product Classification: Installation Category (Overvoltage Category): Pollution Degree: EMC Classification:	This product is in conformity with protection requirements of the following European Council Directives: 73/23/EEC , the Low Voltage Directive, and 89/336/EEC , the EMC Directive. Conformity of this product with any other “CE Mark” Directive(s) shall not be assumed. Class I: Fixed, Permanently Connected, Equipment. (EN 61010-1) Category II: Energy-consuming equipment supplied from the fixed installation. Local level appliances and Industrial Control Equipment. (EN 61010-1) Pollution Degree 2: Normally non-conductive pollution with occasional conductivity caused by condensation. (ref. IEC 664-1) Group 1, Class A, Industrial Control Equipment (EN 55011, emissions) Generic Immunity, Industrial (EN 50082-2, immunity)
CSA Certification (Canada)	CSA C22.2 No. 205M – Signal Equipment
UL Standard (USA)	CSA NRTL/C, UL 1635 – Digital Alarm Communicator System Unit

Sales and Service

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

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Specifications are subject to change without notice.

For More Information

Learn more about how Honeywell's Multivariable Trip Switch for Smart Transmitters can supply a stand alone safety shutdown, visit our website

www.honeywell.com/ps/hfs or contact your Honeywell account manager.

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34-MV-03-02
December 1999
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