



## Hygienic Thermatel® Thermal Dispersion Flow & Level Switch

### DESCRIPTION

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Designed for use specifically in the clean or hygienic process industry, the Thermatel TD2 is an outstanding flow/level switch where easy external wipe-down and a sensor free of cracks and crevices are required. The TD2 Thermal Dispersion Flow/Level switch provides continuous diagnostics, temperature compensation, narrow hysteresis, and fast response time for superior performance.

The TD2 switch uses either AC or DC input power, provides a DPDT relay output with a visual LED indication of status through the glass window in the cover. Other features include ability to electronically measure the set point, a mA output signal for trending and diagnostics and time delay.

See Magnetrol Brochure 54-110 for additional information and complete specifications.

### FEATURES

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- Temperature compensated to provide repeatable alarm under varying process temperatures
- Continuous diagnostics detect sensor fault
- A non-linear mA output signal can be used for trending, diagnostics and repeatable flow/level indication
- Detects minimum flow or presence/absence of flow
- Simple/fast calibration
- Excellent low flow sensitivity
- Process temperatures from -100° to +400° F (-73° to +204° C)
- Fast response time
- 316 stainless steel probe with 32 Ra finish



Model TD2  
with hygienic  
stainless steel enclosure  
& spherical tip probe

### TECHNOLOGY

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The Thermatel TD2 switch utilizes Magnetrol proven thermal dispersion technology. The sensor consists of two RTD elements. One is the reference and the second is heated to a temperature above the process temperature. The electronics detect the temperature difference between the two elements. The temperature difference is greatest in air, then decreases when cooling occurs due to a change in media. An increase in the flow rate further decreases the temperature difference.

The set point is adjusted for the switch to alarm at the desired temperature difference. Once the set point is reached, the relay will change state.

# APPLICATIONS

## PUMP PROTECTION

Installed on the suction or discharge of a pump, a Thermatel switch provides rapid indication of a low flow or no flow condition to prevent pump damage. No moving parts, excellent low flow sensitivity, and low hysteresis between alarm and reset points are all important features in this application. Enhanced temperature compensation minimizes set point drift due to varying process temperatures.

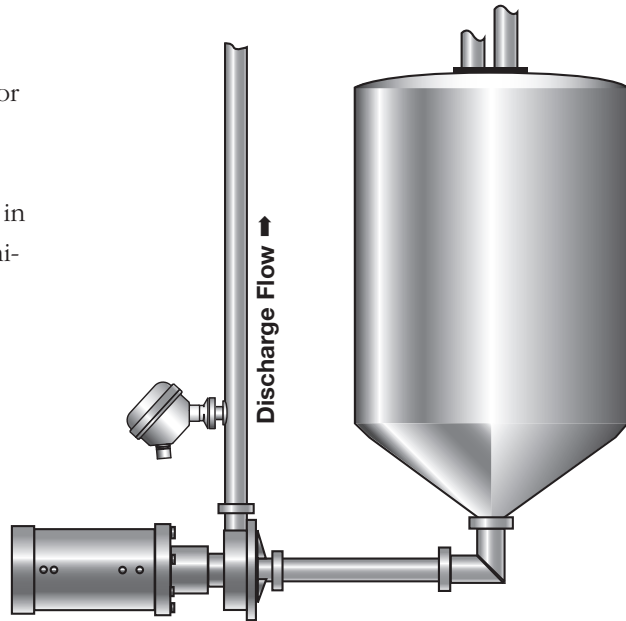
## ADDITIONAL APPLICATIONS:

### Flow Switch

- Water for Injection
- CIP Systems
- CO<sub>2</sub> Flow

### Level Switch

- High Viscosity



Hygienic Centrifugal Pump Protection

# MODEL NUMBER

## TD2 ELECTRONICS

### POWER

7	AC power
8	DC power

### RELAY OUTPUT

D	DPDT 8 amp relay
H	DPDT 1 amp hermetically sealed relay

### GLASS WINDOW IN ENCLOSURE

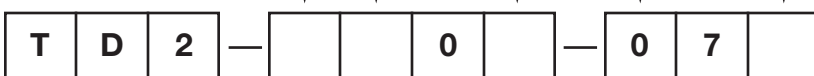
0	None
1	Window provided

### LOCATION

0	Integral
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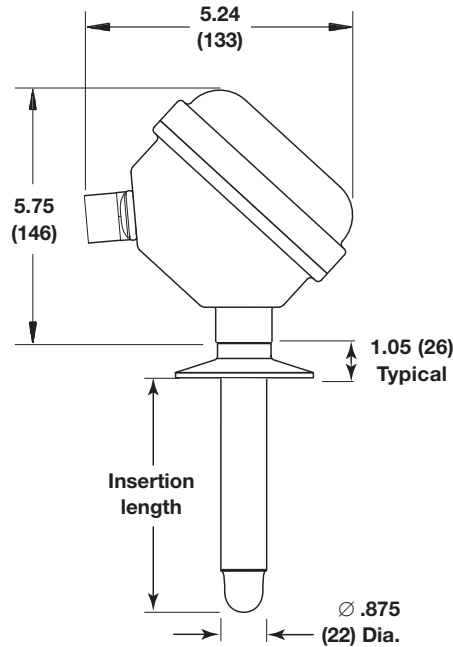
### ENCLOSURE TYPE/CONDUIT CONNECTION

4	304 stainless steel – ½" NPT (single entry)
5	304 stainless steel – M20 (dual entry)



# DIMENSIONAL SPECIFICATIONS INCHES (MM)

## Model TD2 with Hygienic Housing & Tri-Clamp® Connection



### MODEL NUMBER

#### STANDARD PROBE

#### MODEL

TE	Probe length in inches
TM	Probe length in centimeters

#### TIP STYLE

A	Spherical tip	max. +250° F (+121° C)/max. 600 psi (41 bar)
B	Spherical tip – with 4" heat extension	max. +400° F (+204° C)/max. 600 psi (41 bar)

#### MATERIAL OF CONSTRUCTION

A	316/316L stainless steel
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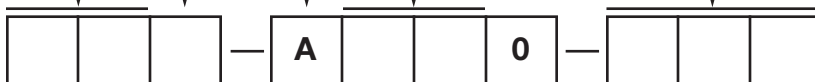
#### HYGIENIC CONNECTIONS

3T	1" and 1½"	Tri-Clamp®
4T	2"	Tri-Clamp
VV	DN65	Varivent®

Contact Magnetrol for other hygienic fittings including Neumo, G1A, and DIN 11.851.

#### INSERTION LENGTH

002	2" minimum with Tri-Clamp connection
003	2" minimum with Varivent connection
in 1" increments to length of 130 inches	
005	Minimum length 50 mm with Tri-Clamp connection
006	Minimum length 60 mm with Varivent connection
Extended lengths in 10 mm increments to length 3300 mm Examples: 50 mm = code <b>005</b> , 3300 mm = code <b>330</b>	



## QUALITY

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The quality assurance system in place at Magnetrol guarantees the highest level of quality throughout the company. Magnetrol is committed to providing full customer satisfaction both in quality products and quality service.

The Magnetrol quality assurance system is registered to ISO 9001 affirming its commitment to known international quality standards providing the strongest assurance of product/service quality available.

## WARRANTY

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All Magnetrol electronic level and flow controls are warranted free of defects in materials or workmanship for one full year from the date of original factory shipment. If returned within the warranty period; and, upon factory inspection of the control, the cause of the claim is determined to be covered under the warranty; then, Magnetrol will repair or replace the control at no cost

to the purchaser (or owner) other than transportation.

Magnetrol shall not be liable for misapplication, labor claims, direct or consequential damage or expense arising from the installation or use of equipment. There are no other warranties expressed or implied, except special written warranties covering some Magnetrol products.

For additional information, see Instruction Manual 54-610.

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