

## SERIES: TSM310

- RUGGED HOUSING
- COMPACT DESIGN
- SHORT RESPONSE TIME
- DUST AND WATER PROOF (IP65)
- RANGES COVERING -30 TO +350°C
- REPEATABILITY BETTER THAN 0.5%
- BRACKET FOR SURFACE MOUNTING
- TEMPERATURE COMPENSATED SWITCH
- ST. STEEL OR COPPER SENSOR & BRACKET
- INTERNAL OR EXTERNAL SETPOINT ADJUSTMENT
- GOLD PLATED CONTACTS FOR INTRINSICALLY SAFE CIRCUITS



### APPLICATIONS:

- Shipbuilding
- Diesel Engines
- Heating & Air Conditioning
- Hydraulic / Pneumatic

### INTRODUCTION

Indumart TSM310 Series Industrial General Temperature Switches meet stringent demands and can be used in critical industrial applications where particular importance is attached to measuring reproducibility, long term stability and protection against water and dust penetration.

Housed in a die cast aluminum case, the Series TSM310 ON/OFF Temperature Controllers are supplied with either stainless steel or copper sensors. The adjustment nub can be external for ease of frequent setpoint changes, or be placed inside the case to prevent setpoint tampering.


The switching differential varies for different ranges of TSM310 Series. Standard, small, large, standard adjustable and large adjustable switching differential models are available. Optionally, the standard model can be supplied with gold-plated contacts.

### SPECIFICATIONS

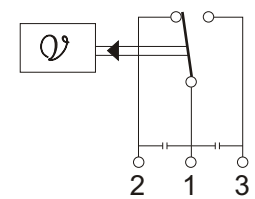
- Repeatability** <math>\leq \pm 0.5\%</math> of full scale
- Scale Accuracy**  $\pm 2\%$  of full scale
- Case** Aluminum die cast, epoxy coated
- Mounting** Bracket with or without protection tube
- Bracket & Tube** Steel nickel-plated
- Environ. Protection** IP-65
- Microswitch** Temperature compensated with Bimetal switch lever
- Dielectric Strength** 2 kV terminal ground
- Insulation Resistance**  $> 1M\Omega$
- Action** Type 2.B (EN60730-1 / 60730-2-9)
- Adjustments** Internal or external of the case
- Weight** Approximately 950g (2.1 lb)

| Type    | Electrical Rating                |   |
|---------|----------------------------------|---|
|         | AC                               | DC  |
| A, F, G | 400V-15A                         | 220V-0.2A<br>110V-0.4A<br>24V-6A<br>12V-15A |
| B       | 250V-10A                         | 220V-0.3A<br>110V-0.5A<br>24V-5A<br>12V-15A |
| C       | 400V-20A                         | 220V-0.6A<br>110V-0.7A<br>24V-6A<br>12V-20A |
| D       | 24V-0.01A<br>12V-1.0A<br>5V-2.0A | 24V-0.01A<br>12V-1.0A<br>5V-2.0A            |

### Connection

2 = 

3 = 



## Switching Differential

|              |  |  |  |  |  |  |
|--------------|--|--|--|--|--|--|
| <b>Range</b> | 30...+40°C<br>-10...+25°C<br>0...+35°C<br>10...+45°C<br>10...+80°C<br>15...+30°C | -10...+80°C<br>-10...+35°C<br>5...+95°C<br>20...+110°C   | 20...+150°C  | 20...+230°C  | 40...+300°C<br>70...+350°C                             |  |
| <b>Model</b> | A & D<br>B<br>C<br>F<br>G  | ~0.7°C<br>~0.3°C<br>~4.0°C<br>~4.0...21°C<br>~0.7...10°C | ~2.0°C<br>~0.8°C<br>~5.5°C<br>~5.5...26°C<br>~2.0...12°C | ~2.5°C<br>~1.0°C<br>~7.0°C<br>~7.0...34°C<br>~2.5...16°C | ~3.0°C<br>~1.2°C<br>~15°C<br>~15...65°C<br>~3.0...32°C | ~4.0°C<br>~2.0°C<br>~18°C<br>~18...84°C<br>~4.0...40°C |

### ORDER CODE

#### INDUSTRIAL TEMPERATURE SWITCH

**Model:** TSM310 -

#### TYPE

External Adjustment  
Internal Adjustment

1  
2

#### RANGE

-30...+40°C  
-10...+80°C  
-10...+35°C  
-10...+25°C  
0...+35°C  
5...+95°C  
10...+45°C  
10...+80°C  
15...+30°C  
20...+110°C  
20...+150°C  
20...+230°C  
40...+300°C  
70...+350°C

01  
02  
03  
04  
05  
06  
07  
08  
09  
10  
11  
12  
13  
14

#### SWITCHING DIFFERENTIAL & ELECTRICAL RATING (See the Table)

Type "A"  
Type "B"  
Type "C"  
Type "D"  
Type "F"  
Type "G"

A  
B  
C  
D  
F  
G

#### SENSOR MATERIAL

316L St. Steel  
Copper  
Nickel-plated Copper  
Chrome-plated Copper

1  
2  
3  
4

#### SENSOR DIAMETER

4.7 mm  
7 mm  
9 mm

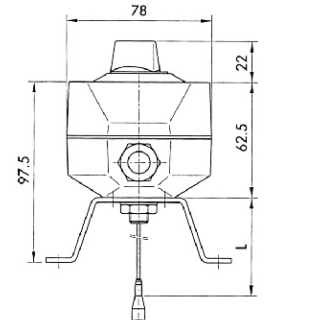
1  
2  
3

#### MOUNTING

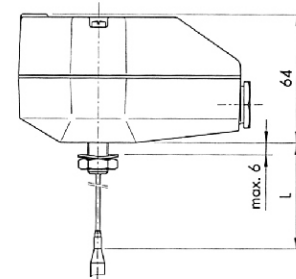
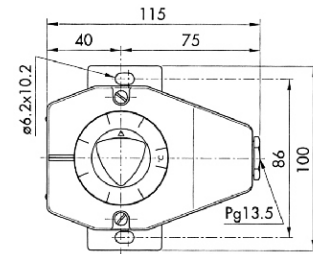
Direct with protection tube  
Remote with capillary

1  
2

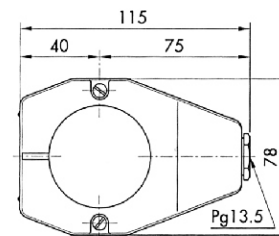
### DIMENSIONS (mm)



External adjustment - TSM310-1



Internal adjustment - TSM310-2



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