

# CABLE-TYPE TEMPERATURE SENSORS

## SAF - SHF Eng.



- **NTC or Pt temperature sensing element**
- **Measurement ranges:**
  - SAF 010 / 110 (0...100 °C)
  - SAF 001 (– 40...+ 40 °C)
  - SHF 001 (0...180 °C)
- **Installation:**
  - immersion (pocket optional)

### 1. APPLICATION

For measuring temperature of a fluid circulating in a pipe. The sensing element is housed in a brass pocket and is attached directly to a bipolar cable.

### 2. MODELS AVAILABLE

Code	Description	Setting range	Sensing element	Max. length cables of :		
				1 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>
<b>SAF 010</b>	Cable-type sensor	0... 100 °C	NTC 10 kΩ	700 m	1000 m	2000 m
<b>SAF 110</b>	Double cable-type sensor (4 conductors))	0... 100 °C	2 NTC 10 kΩ	700 m	1000 m	2000 m
<b>SAF 001</b>	Cable-type sensor	– 40... 40 °C	NTC 1 kΩ	700 m	1000 m	2000 m
<b>SHF 001</b>	Cable-type with 3-metre cable	0... 180 °C	Pt 1 kΩ	70 m	100 m	200 m

### 3. ACCESSORIES

Code	Description
<b>GIS 090</b>	Brass pocket 1/2" x 90 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
<b>GIS 090/Inox</b>	Stainless steel pocket 1/2" x 90 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
<b>GIS 160</b>	Brass pocket 1/2" x 160 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
<b>GIS 160/Inox</b>	Stainless steel pocket 1/2" x 160 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
<b>GIS 500</b>	Brass pocket 1/2" x 500 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
<b>GIS 500/Inox</b>	Stainless steel pocket 1/2" x 500 mm. <b>(Length includes 15 mm threading)</b> with cable entry gland.
	<b>N.B. Detectors cable: Standard length 1.5 meter; other lengths on request, (max 10 meter).</b>
<b>APS 150</b>	Pocket extension (150 mm) for fluid temperatures <b>above</b> 130 °C.
<b>ACM 103</b>	Enclosure with terminal block and adaptor for old-type COSTER pockets

### 4. TECHNICAL DATA

Temperature sensing element:		Protection sensing element	copper pocket
Type	see table in 2 above	Pockets:	
Time constant	1 minute	Features	see table in 3 above
Range	see table in 2 above	Installation	immersion
Dimensions & length of cable		Cable entry gland	PG 11
SAF 001/010	2 x 0.5 mm <sup>2</sup> x 1.5 m	Construction standards	Italian Electrotech. Committee (CEI)
SHF 001	2 x 0.5 mm <sup>2</sup> x 3 m	Protection	IP 54
SAF 110	4 x 0.5 mm <sup>2</sup> x 1.5 m	Weight	50 g.

### 5. INSTALLATION

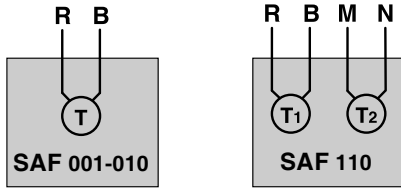
Preferably immersion inside the pipework.

- Install the pocket, if possible inclined against the current. Insert the sensing element protective pocket as far as it will go and then secure it with the screw provided. Then tighten up the cable entry gland to prevent any water infiltration.
- Carry out the electric wiring in strict accordance with the diagram and with the safety regulations in force, using cables of the appropriate dimensions (**NOT telephone or similar cables**) see table in 2 above.

**Warning:**

- **To lengthen the cable for the sensing elements, if necessary: the diameter and the lengths of the cables are given in the table in 2 above and must be scrupulously adhered to so as not to compromise correct operation.**
- **To connect several detectors by a single multicore cable: all the detectors must be manufactured by COSTER.**
- **For correct data monitoring the installation must follow these instructions to the letter.**

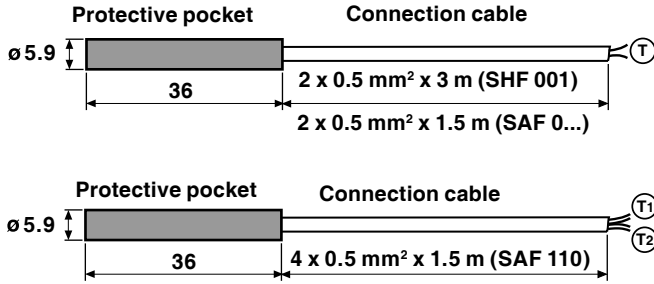
**6. WIRING DIAGRAM**



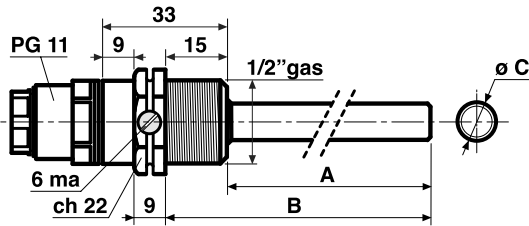
Colour of connecting cables:

- R = red
- B = white
- M = brown
- N = black

**7. OVERALL DIMENSIONS**

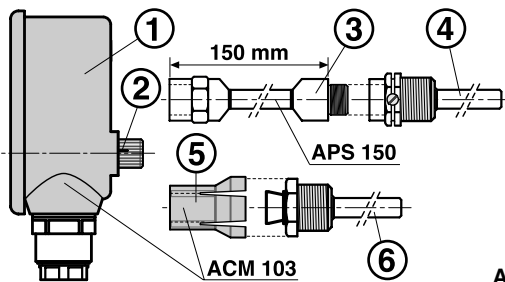


**POCKET**



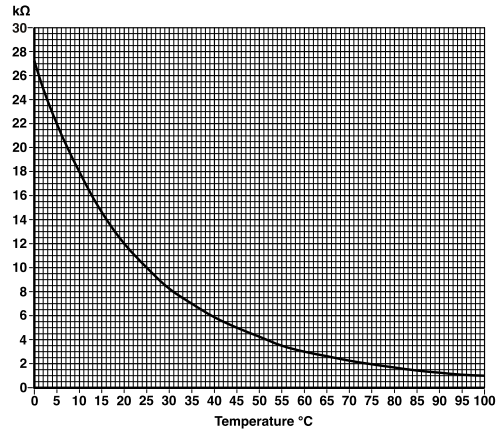
Model	Materials	A mm	B mm	C ø
GIS 090	Brass / stainless steel	75	90	8
GIS 160	Brass / stainless steel	145	160	9
GIS 500	Brass / stainless steel	485	500	9

**8. ASSEMBLING ACCESSORIES (optional)**

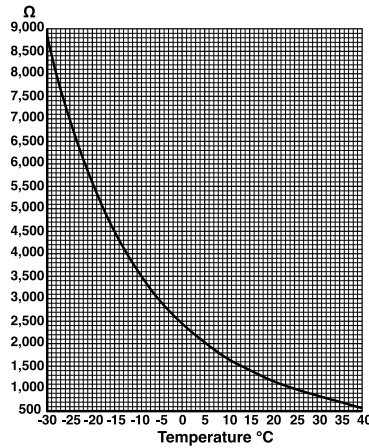


- 1 - Container
  - 2 - Securing screw
  - 3 - Extension (APS 150)
  - 4 - New pocket
  - 5 - Adaptor
  - 6 - Old pocket
- (N.B.: Point 1 + point 5 = ACM 103)

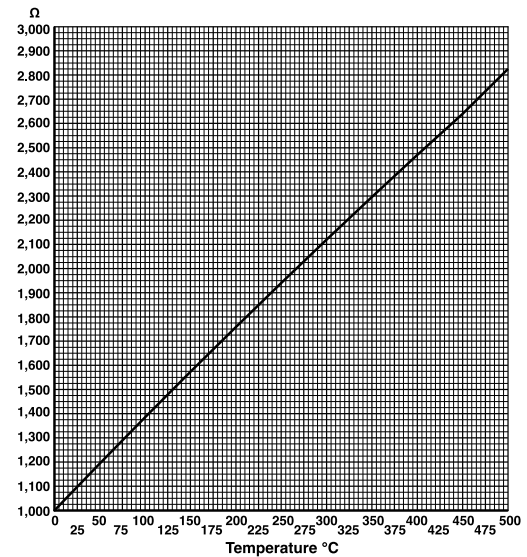
**9. DIAGRAM NTC 10 KΩ SENSING ELEMENT**



**10. DIAGRAM NTC 1 KΩ SENSING ELEMENT**



**11. DIAGRAM Pt 1 KΩ SENSING ELEMENT**



**Amendments to data sheet**

from version	to version	Page	Section	Details of amendments
18.01.06 LB	03.02.06 MC	1	3. Accessories	Add : optional length detectors. Amended: description pocket.
		2	7. Overall dimensions	Add : cable SHF 001.



Head Office & Sales  
 Via San G.B. De La Salle, 4/a  
 20132 - Milano  
 Tel. +39 022722121  
 Fax +39 022593645

Reg. Off. Central & Southern  
 Via S. Longanesi, 14  
 00146 - Roma  
 Tel. +39 065573330  
 Fax +39 065566517

Orders and Shipping  
 Via Gen. Trebboldi, 190/192  
 25048 - Edolo (BS)  
 Tel. +39 0364773200  
 Tel. +39 0364773202  
 Fax +39 0364770016  
 E-mail: info@coster.info  
 Web: www.coster.info



D 33264

