



Technical Support Bulletin No. 28

Use the new probes!



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Introduction

The probe, or rather the element that detects the temperature in the application, should be chosen according to precise criteria which also take into account the construction characteristics of the probe itself. To make this choice easier and avoid annoying errors and/or breakdowns, Eliwell has rationalised the management of probe codes, as illustrated below.

Did you know that?

1. If the Eliwell probe code starts with **SN7** it is a **PTC** probe
2. If the Eliwell probe code starts with **SN8** it is a **NTC** probe
3. If the Eliwell probe code starts with **SN9** it is a **Pt1000** probe
4. The characteristics of the new Eliwell probes are easily identifiable in the following tables:

Probe identification	Probe type	Cable type	Tube material	Tube size	Probe length	Tube cable connection	Terminals	Filler	Extra
AB	C	D	E	FG	HI	L	M	N	O

AB	[SN]	Prefix for all probe codes							
C	[7]	PTC							
	[8]	NTC							
	[9]	PT1000							
D	[D]	Cable - Thermoplastic rubber exterior, polypropylene interior							
E	[A]	AISI 304							
	[E]	Thermoplastic rubber							
FG	[B2]	Clamp-on 6x20							
	[C1]	Tube size 4x40							
	[D1]	Tube size 5x20							
	[E1]	Tube size 6x20							
HI	[15]	Probe length 1.5m							
	[30]	Probe length 3 m							
L	[0]	No connection							
	[A]	Connection with heat-shrinkable sleeve							
	[C]	Teflon connection							
M	[2]	Tips							
N	[A]	Polyurethane resin							

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O	[C]	TPE filler (thermoplastic rubber)
	[0]	Normal
	[6]	Green colour
	[V]	Fast (NTC Fast)

5. The code is stamped on the cable, about 20cm from the tip.
6. PTC stands for **P**ositive **T**emperature **C**oefficient, which refers to the resistance increase of the sensitive element with rising temperature. Eliwell probes use the Philips ® KTY 81-121 sensor. See also Bulletin n°15
7. NTC stands for **N**egative **T**emperature **C**oefficient, which refers to the resistance decrease of the sensitive element with rising temperature. Eliwell probes use the Semitec ® 103-AT sensor. See Bulletin n°15
8. Pt1000 indicates a platinum sensitive element (Pt), with a resistance of 1000 Ohms at 0°C. This definition is regulated by specific standards that standardise the identification of these probes
9. All the new generation of **PTC** probes have **GREY** coloured cables.
10. All the new generation of **NTC** probes have **BLACK** coloured cables.
11. All the new generation of **Pt1000** probes have **GREEN** coloured cables.
12. All the probes, apart from the "FAST" which are IP67-rated, have IP68 protection rating.
13. All the probes will be manufactured with TPE (thermoplastic) cables, which covers almost entirely the performance characteristics of PVC and/or Silicone cables.

Applications

Measurement in air:

All the probes are suitable for ambient temperature measurement (in air). Measurement in environments where there are substances which release components that are harmful to TPE must be assessed, in that they could affect the life of the probe. Positioning the probe with the tip pointing upwards, when/where necessary, is generally suggested.

Measurement in fluids:

All the probes are suitable for measuring the temperature of fluids in that they have IP68 protection rating. Measurement in environments where there are substances which release components that are harmful to TPE must be assessed, in that they could affect the life of the probe. Positioning the probe with the tip pointing upwards, when/where necessary, is generally suggested.

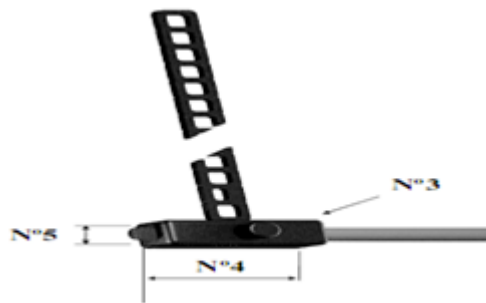


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Measurement in evaporators/heat exchangers:

All the probes are suitable. Using the probes with clamp-ons that fix them easily to the heat exchanger in applications such as counters, cold rooms and convection fans can be suggested. Positioning the probe with the tip pointing upwards, when/where necessary, is generally suggested.



Measurement in evaporators/heat exchangers with fast response times:

The "fast" probes could be used for quicker reading. This will make the reading faster. This is needed, for example, in the electronic control of overheating - EEV, to obtain the best possible performance/efficiency.

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