

FT Series

The FT series thermo sensors made out of fluorocarbon plastic like PTFE or PFA are specially designed for monitoring the temperature of ultrapure water, chemicals and gases for the semiconductor, photovoltaic or other related industries. Due to the innovative sealing and used sapphire sensing technology, no contamination, liquid entrapping or rapid aging effects takes place. The monitoring of aggressive ultra pure fluids or gases without sensing drifts over long periods are guaranteed. Patent granted.

>> immediate temperature sensing for chemicals <<



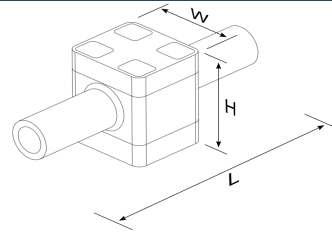
PTFE

- Measuring characteristics as per DIN EN 60751
- Best accuracy, repeatability and stability
- Ultra fast response time
- Made out of ultra pure and chemical inert materials
- PT100 or PT1000 measuring technology
- Useable with a broad range of connection technologies (Pillar®, Flaretek®, Swagelok® and many more)

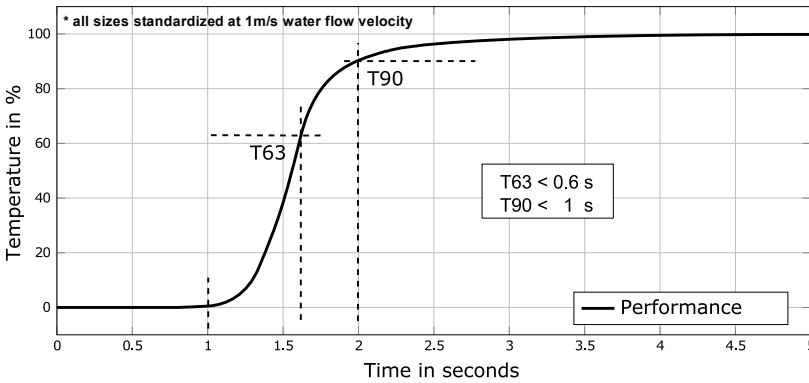
Specifications

Dimensions

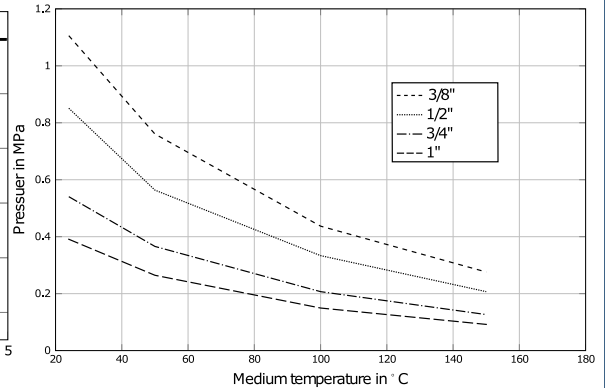
FT Size	Size	L x W x H
FT38	3/8 inch	60mm x 20mm x 24mm
FT12	1/2 inch	70mm x 22mm x 27.5mm
FT34	3/4 inch	85mm x 29mm x 34mm
FT100	1 inch	96mm x 37mm x 42mm



Performance



Maximum pressure vs. tube size



specification sensor	temperature range ¹	10 °C to 90 °C (50°F to 194°F) ⁶
	applicable chemistry	virtual any chemistry
specification sensing element (PT100, PT1000)	maximal working pressure ²	check out max. pressure for specific temperature and sensor size in pressure graph
	measuring range ¹	±0°C to 150°C (32°F to 302°F)
	accuracy ³	±0.25°C (±0.45°F) @ 90°C (194°F) standard up to ±0.075°C (±0.135°F) on request
	interchangeability ³	±0.13°C (±0.234°F) @ 20°C (68°F) standard up to ±0.04°C (±0.072°F) on request
	long term stability @ 150°C	less than 0.04%
	element response time T50 {T63} in water stream (v = 0.4m/s)	0.05 sec {0.08 sec}
	sensor rise time³	T63 {T90} ⁴
wetted material	thermal conduction element	Al2O3 (99.99987% purity)
	body	virgin PTFE
	optional body (only on request)	PFA
material - no media contact	top and bottom cover	PVDF
	sensing element	platinum thin film element
	fixing elements	stainless steel screws (A4 grade)
	cable	4 line shielded litz wire FEP insulation
fluid connection	sealing	Perfluorelastomer FFKM (ultra pure)
	available size ⁵	for 3/8" to 1" tube size (e.g. Pillar Fitting®, Flaretek®, Swagelok® and more)
pressure drop coefficient	3/8"	Cv = 7.73 [US gpm] Kv = 6.68 [m3/h]
	1/2"	Cv = 30.08 [US gpm] Kv = 26.03 [m3/h]
	3/4"	Cv = 248 [US gpm] Kv = 213.3 [m3/h]
	1"	Cv = 525 [US gpm] Kv = 451.5 [m3/h]

¹ higher temperature on request | ² higher pressure on request | ³ class F0.1 DIN standard (higher on request) | ⁴ time to reach 63% (90%) of final value for whole sensor assembly | ⁵ customized size on request | ⁶ HF49% limited to 80°C (176°F)
 Note: Information presented enclosed is subject to change as product enhancements are made on a regular basis.

Technical Data Sensing Elements (PT100 / PT1000)*

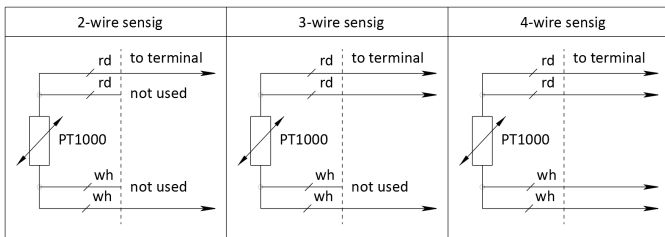
Type:	Platin thin film element (thin film technology)
Specification:	DIN EN 60751:2009-05
Standard temperature range:	-0°C to +150°C (32°F to +302°F)*
Standard temperature coefficient:	PT100 (PT1000) TCR = 0.00385K ⁻¹ *
Standard tolerance class:	standard: F0.1 optional: 1/5 DIN B, 1/10 DIN B*
Recommended applied current:	1mA @ 100Ω (0.3mA @ 1000Ω)

*other tolerance classes, temperature ranges, temperature coefficients or ohmic values on request

Technical Data Cable

Type:	4 wire cable / shielded / FEP insulation
Specifications:	MIL-C-27500, MIL-W-16878 and ASTM-B-298
Temperature range:	-200°C to +200°C (-328°F to +392°F)
Insulation class:	ET+ (up to 250V AC eff)
Type litz wire:	silver plated copper wire

Connection Plan

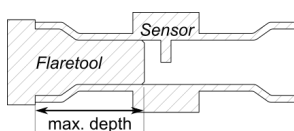


Note: don't connect wires which are not used, it will effect accuracy!

Scope of delivery

- Cable length: 2 meters
- PTFE (PFA) housing
- Tube ends / no fittings

Use of proper flare tool



Model	Max. depth [mm]
FT38	23
FT12	28
FT34	38
FT100	42

Optional: Contact manufacturer for specific fitting assembly, different cable length or different class/type of sensor element.

Sensor labeling according DIN EN 60751:2009-05

Example:

1 x Pt100/F0.1/4/+10/+90

Pressure drop coefficient Cv

$$Q = Cv \sqrt{\frac{\Delta P}{SG}}$$

Q flow (US gallons per minute)
ΔP pressure difference (psi)
SG specific gravity (dimensionless)
SG 1 in case of water

Orientation and flow direction

