

Prozess adaption PHARMadapt ESP

PHARMA

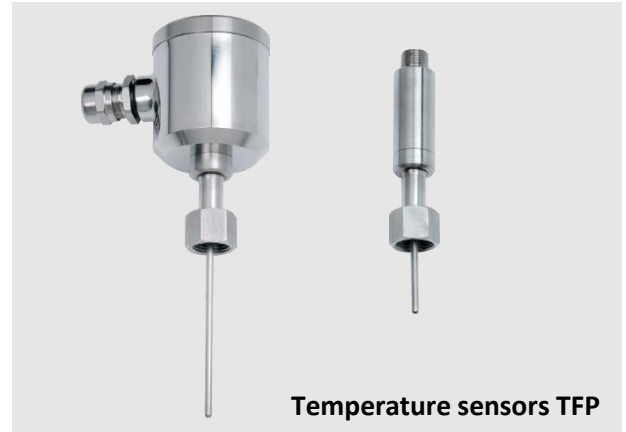
No process stop due to sensor removal during recalibration or replacement

Temperature measurement without media contact

With the ESP installation system, an thermowell is **permanently installed** in the process. The slim tip of the sensor is inserted into this thermowell and held in contact by a spring. It is therefore **not in direct contact** with the medium.

The sensor can be removed at any time for **recalibration or replacement**, without electrical disconnection and without opening the process, and consequently **without necessity to shut down the plant or to stop the process**.

- **Tailored to requirements:** Special design for pharmaceutical applications
- **Variable:** Installation **in tanks** using welding sockets or adapters. Installation **in pipes** using tees or elbows with integrated thermowells
- **Fast and precise:** t50 response time from 4.4 seconds, measuring accuracy $<\pm 0,25$ °C
- **One for all:** One sensor type with the same probe length can be used for differing pipe widths, thus **minimizing spare parts inventory** and planning requirements
- **Reliable:** Spring-mounted tip for perfect contact
- **Maximum hygiene:** No product contact = **No risk of contamination** by previous products, foreign bodies and germs via the sensor
- Easy to clean: **design without dead-legs** ensures easy CIP/SIP cleaning
- **Certified quality:** PHARMadapt ESP complies with current norms, specifications and standards such as 3-A, FDA, USP... (see product information)



Available temperature sensors

- TFP 58P | TFP-68P | TFP-168P | TFP-188P
- **Accuracy class:** A | 1/3B | 1/10B
- **Options:** 2x Pt100 | LCD display | transmitter



Available installation systems for pipes and vessels

- **Weld-in thermowells**
- **Adapters** for diverse process connections (Tri-Clamp, Varivent...)
- **Extension sleeves** for insulated / double-walled vessels
- **Fittings with pipe sections** (designed for orbital welding, to reduce time and quality problems compared to sleeve welding):
 - Tees DN8...DN100
 - Elbows DN10...25 | DN ½" ...1"




The perfect installation situation for every application, in all pipes and vessels

TFP Temperature sensors (Details see respective product information)

	Type	Head Ø	Pt100	Transmitter available	Electrical connection	Probe length in mm
	TFP-58P	50 mm	✓	✓	M12 plug PG cable gland	37 59 83 160
	TFP-58P.2	50 mm	✓ (2x)	-	M12 plug PG cable gland	37 59 83 160
	TFP-68P	50 mm	✓ (2x)	✓ (2x)	M12 plug	37 59 83 160
	TFP-168P	18 mm	✓	✓	M12 plug	37 59 83 160
	TFP-188P	18 mm	✓	-	PTFE fixed cable	37 59 83 160

ESP Fitting system (Details see respective product information)

Material: 1.4435 (316L) with 3.1 certificate, surface Ra ≤ 0,8 µm / 0,6 µm / 0,4 µm

	Type	Application	For probe length	Installation length
	ESP-E	Weld-in thermowell for pipes and tanks	83 mm 160 mm	
	ESP-C	Adapter with integrated thermowell for Tri-Clamp 1" ...1 1/2"	83 mm	66 mm
	ESP-B	Adapter with integrated thermowell for BioControl DN25, DN50 and DN65	59 mm	22 mm
	ESP-V	Adapter with integrated thermowell for Varivent DN25 and DN40	37 mm 59 mm	20 mm 42 mm
	ESP-F	Adapter F52 / F46 with integrated thermowell for Fermenter	83 mm	19 mm
	ESP-G	Tee pipe element with integrated thermowell DIN 2: DN10...DN100 ISO: DN8...DN80 ASME: 1/2" ...4"	37 mm With ESP-VL: 83 mm 160 mm	Pipe 70...310 mm
	ESP-W	Elbow pipe element with integrated thermowell DIN 2: DN10...DN25 ISO: DN8...DN20 ASME: 1/2" ...1"	37 mm With ESP-VL: 83 mm 160 mm	Pipe 35...55 mm bzw. 62...88 mm
	ESP-VL	Extension 46 or 123 mm, for ESP-G Tees or ESP-W elbows	Extension from 37 mm to 83 mm 160 mm	