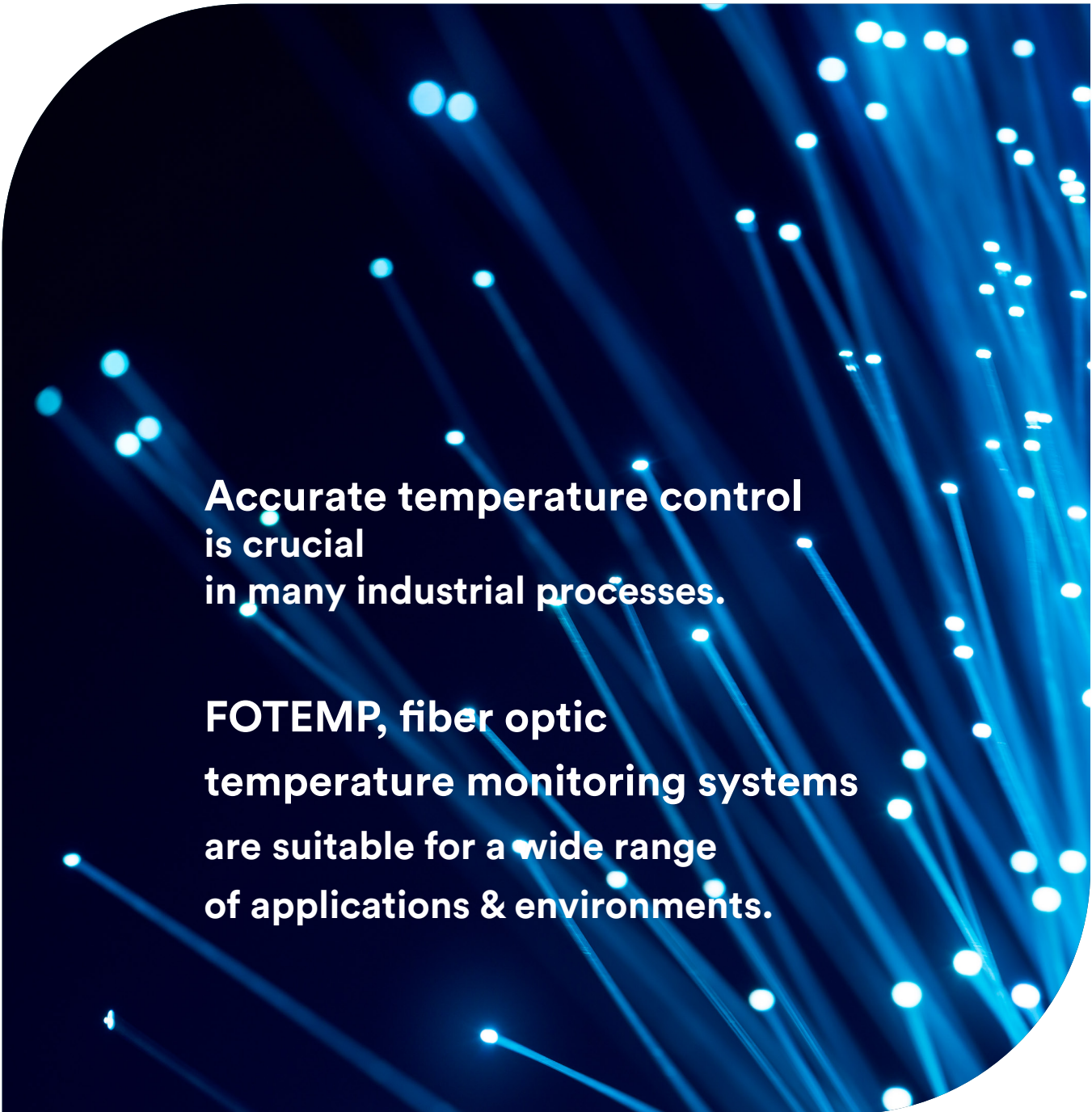


PORTFOLIO BROCHURE

FOTEMP

**Fiber optic
temperature monitoring**

A background image showing a dense array of fiber optic cables. The cables are illuminated from the bottom right, creating a fan-like pattern of bright blue light rays that spread out towards the top left. The overall color palette is a gradient of blues, from deep navy to bright cyan.

**Accurate temperature control
is crucial
in many industrial processes.**

**FOTEMP, fiber optic
temperature monitoring systems
are suitable for a wide range
of applications & environments.**

Fiber optic monitoring devices

Our FOTEMP fiber optic temperature monitoring devices deliver reliable performance even in environments exposed to microwave radiation and high-frequency interference.

They are ideal for high-voltage applications, strong magnetic fields, and demanding industrial settings, ensuring precise temperature measurements to protect critical equipment.

FOTEMP devices support customizable probes, sensors, and accessories, with calibration options from -200°C to +300°C. They integrate seamlessly with our monitoring software, offering comprehensive data logging and intuitive visualization for efficient system oversight.

Contact us and get support with the product selection.



FOTEMP T30

Why buy:

- Turnkey and fully customizable systems
- Exceptional accuracy: $\pm 0.2^{\circ}\text{C}$
- Intuitive, user-friendly interface
- Completely immune to electromagnetic and radio-frequency interference
- Unaffected by microwave radiations
- Highly versatile, suitable for a wide range of industrial and scientific applications

Application:

- Power transformers
- Switchgears
- High voltage applications
- Nuclear environments
- Harsh or hazardous industrial settings
- Instrumentation and process application
- Aerospace applications
- Process monitoring
- Research laboratories
- Medical and biomedical applications



Technical data at a glance:

DEVICE TYPE	FOTEMP MN30	FOTEMP HD20	FOTEMP MS10	FOTEMP C15	FOTEMP C20	FOTEMP T20	FOTEMP T30
Nr. of channels	1	1 or 2	1 - 40	1, 2 or 4	1, 2 or 4	2 to 16	2 to 16
Modules	NO	NO	10x7TE or 5x14TE	NO	NO	NO	4x up to 4 channels
Measuring range	-200°C to +300°C	-200°C to +300°C	-200°C to +300°C	-200°C to +300°C	-200°C to +300°C	-200°C to +300°C	-200°C to +300°C
Accuracy	± 0.2 K	± 0.2 K	± 0.2 K	± 0.2K	± 0.2 K	± 1.0 K	± 1.0 K
Sample rate channel	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms
Display	NO	3,5" LCD	0.96" on 7TE or 1.92" on 14TE OLED	NO	2,8" LCD	4.3" LCD	7" LCD
Analog output	none	none	0 - 10 V or 4 - 20 mA	0-10 V or 4-20 mA	0 - 10 V or 4 - 20 mA	0 - 10 V or 4 - 20 mA	0 - 10 V or 4 - 20 mA
Relay	none	none	1 per channel	1 per channel	1 per channel	2 programmable, 1 sensor fault, 1 watchdog	16 free programmable relays
Interface	TTL, RS232, RS485, USB	USB, Reference sensor	RS232, RS485, USB	USB (standard) or RS485	USB (standard) or RS485	RS485, USB, Ethernet	RS485, Ethernet, RS232 (debug)
Available protocol	Modbus, ASCII	ASCII	ASCII	Modbus, ASCII	Modbus, ASCII	Modbus, ASCII	Modbus, DNP3.0, IEC61850, IEC60870-104, ASCII
Data logging	Continuous or timed logging on microSD	Continuous & timed logging, spectrum snapshots	NO	NO	NO	Continuous or timed logging	Continuous, and time logging, 32 GB
Power supply	USB-Powered or 9-24 VDC	12 VDC	100-240 VAC/ 50-60 Hz	24 VDC	24 VDC	24 VDC	24 VDC
Mounting/housing options	Mounting holes	none	19" rack mount chassis, 84TE or 42TE Cabinet	DIN rail mounting bracket, Pressed nuts, Threaded bolts	DIN rail mounting bracket, Pressed nuts, Threaded bolts	DIN rail mounting bracket	DIN rail standard mounting bracket or
Connector type	ST	ST	ST	ST	ST	ST	ST

Application:

	For embedded instrument applications	EMI, RFI and microwave environments	High voltage environments	Harsh and hazardous environments	Nuclear environments	Aerospace applications	Process monitoring	Biomedical applications	Oil-filled transformers	MRI and other magnetic field applications
FOTEMP MN30	●	●				●	●	●		●
FOTEMP HD20		●	●	●	●		●		●	●
FOTEMP MS10		●	●				●			●
FOTEMP C15	●	●	●	●		●	●	●		●
FOTEMP C20		●	●				●	●		●
FOTEMP T20		●	●	●	●	●	●		●	●
FOTEMP T30		●	●	●	●		●		●	●

Fiber optic sensors

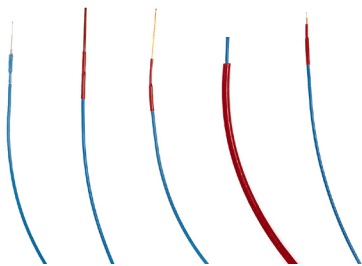
Our fiber optic sensors use a Gallium Arsenide (GaAs) crystal at the fiber tip, making them ideal for highly accurate temperature measurements in environments exposed to microwave radiation and high-frequency interference. Their fully non-metallic, dielectric design ensures complete immunity to electromagnetic and RF fields, significantly outperforming traditional sensors such as RTDs or thermocouples.

Designed for high-voltage, magnetic field-intense, and harsh industrial environments, these sensors deliver the reliability and safety required in the most demanding applications.

All fiber-optic sensors integrate seamlessly with FOTEMP monitoring devices, ensuring stable, precise, and repeatable temperature measurements.

By choosing our solution, you gain accurate temperature monitoring that supports optimal operation, enhanced reliability, and superior protection of your most valuable assets.

Contact us and get support with the product selection.



Fiber optic sensors

Why buy:

- Exceptional accuracy: ± 0.2 °C
- Stable, repeatable measurements
- Flexible bending radius:
 - Longterm (>10min) = 27 mm
 - Momentary (≤ 10 min) = 10 mm
- Immune to electromagnetic, RF, and microwave interference
- Resistant to extreme temperatures
- Versatile and suitable for a wide range of applications

Application:

- Power transformers
- Switchgears
- High voltage applications
- Nuclear environments
- Harsh or hazardous industrial settings
- Instrumentation and process application
- Aerospace applications
- Process monitoring
- Research laboratories
- Medical and biomedical applications



Technical data at a glance:

Sensor type	TS2P	TS3	TS4	TS5	TST
Long-term temperature range	-200°C to +260°C	-200°C to +260°C	-200°C to +260°C	-200°C to +260°C	-200°C to +260°C
Short-term temperature range	+260°C to 300°C	+260°C to 300°C	+260°C to 300°C	+260°C to 300°C	+260°C to 300°C
Accuracy	+/- 0.2 K	+/- 0.2 K	+/- 0.2 K	+/- 0.2 K	+/- 0.2 K
Thermal response	20 K/s	12 K/s	7 K/s	19 K/s	3 K/s
Probe dimension	D1: 0,45 mm D2: 1,7 mm D3: 1,3 mm	D1: 1,0 mm D2: 1,7 mm D3: 1,3 mm	D1: 1,0 mm D2: 1,9 mm D3: 1,3 mm	D1: 0,55 mm D2: 1,7 mm D3: 1,3 mm	D1: 1,3 mm D3: 3,0 mm
Other dimensions	L1: 2 mm L2: 22 mm L3: 2 - 20 m	L1: 15 - 550 mm L2: 20 mm L3: 2 - 20 m	L1: 15 - 550 mm L2: 13 mm L3: 2 - 20 m	L1: 15 - 550 mm L2: 20 mm L3: 2 - 20 m	L1: 10 mm L3: 3 - 20 m
Cable coating	Polyimide / PTFE	Polyimide / PTFE	PTFE	Polyimide / PTFE	PTFE
Connector type	ST	ST	ST	ST	ST
Optional	-	-	-	-	Nomex® J-Spacer Nomex® Disk-Spacer

Selection matrix:

Sensor type	Application	Key features
TS2P	General use Radio-frequency environments, High-voltage applications, Semiconductors, and Medical testing	Smallest size, Bare GaAs crystal (300 µm x 300 µm) for very small surface areas, Semiconductor devices, and micro vials, Non-conductive
TS3	General use Food, Microwave oven, and Radio Frequency environments	Customizable semi rigid probe, Immune to EMI/RFI and Microwave emissions, Non-conductive
TS4	Harsh environments Harsh & Chemical environments, Liquid immersion	High accuracy, corrosion resistant, PTFE coated, Non-conductive
TS5	Medical & Small Form Factor Medical environments, Catheter instrumentation, Semiconductors, Small Form Factor	Customizable probe, Small form factor, Compact size, Non-conductive
TST	Transformers Oil-filled & dry-type transformers	Specifically designed to be used in oil-filled and dry -type transformers, without air inclusions, Non-conductive

Fiber optic accessories

Feedthrough DF1 - NPT 1/4"



Temperature range	-40°C to +120°C
Pressure	Max. 200 bar
Thread size	¼" NPT
Thread angle	60°C
Connector type	ST
Probes	Compatible with all COMEM fiber optic sensors

Feedthrough DF5 - Metric M14



Temperature range	-40°C to +120°C
Pressure	max. 2 bar
Thread size	M14 X 1.5
Thread angle	60°C
Connector type	ST
Probes	Compatible with all COMEM fiber optic sensors

KF40 flange



Material	Stainless steel
Dimension	On customer request
Number of feedthroughs	1 - 2
Mounting	Welded
Probes	Compatible with all COMEM fiber optic sensors

TWP set: Tank wall plate, Block flange & J-Box



Material	Stainless steel
Dimension	TWP R: 125 mm L: 30 mm DN125 R: 125 mm L: 30 mm Box 156x156x164,5 mm
Number of feedthroughs	1 - 16
Mounting	Welded or screwed on tank wall
Probes	Compatible with all COMEM fiber optic sensors



Distance cable



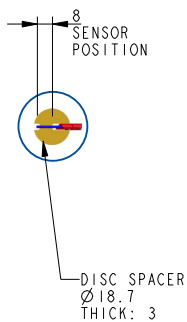
Temperature range	-40°C to +85°C
Fiber Ø	200 µm
Sensor standard lengths	2 m up to 20 m (up to 30 m with PVC)
Connector type	ST with metallic ferrule (-40°C to 85°C)
Signal conditioner	Compatible with all COMEM fiber optic sensors

Distance cable - multiwire



Inner material	PVC
Outer material	PE
Account PCF-Elements (200/230)	6
Wire-Ø [mm]	3.5 mm
Exterior-Ø [mm]	7.5 mm
Min. bending radius (short term)	120 mm
Min. bending radius (long term)	100 mm
Max. load (short term)	1200 N
Max. load (long term)	1000 N
Weight	ca. 80 kg/km
Operating temperature	-40°C to +70°C

Disk-spacer & busbar



Sensor types	Disk-spacer for use with TST sensor Busbar used with TS3 sensor
Dimensions	Consult drawings
Other lengths available upon request	

Contact us and get support with the product selection.

Service & Calibration

for fiber optic temperature monitoring systems

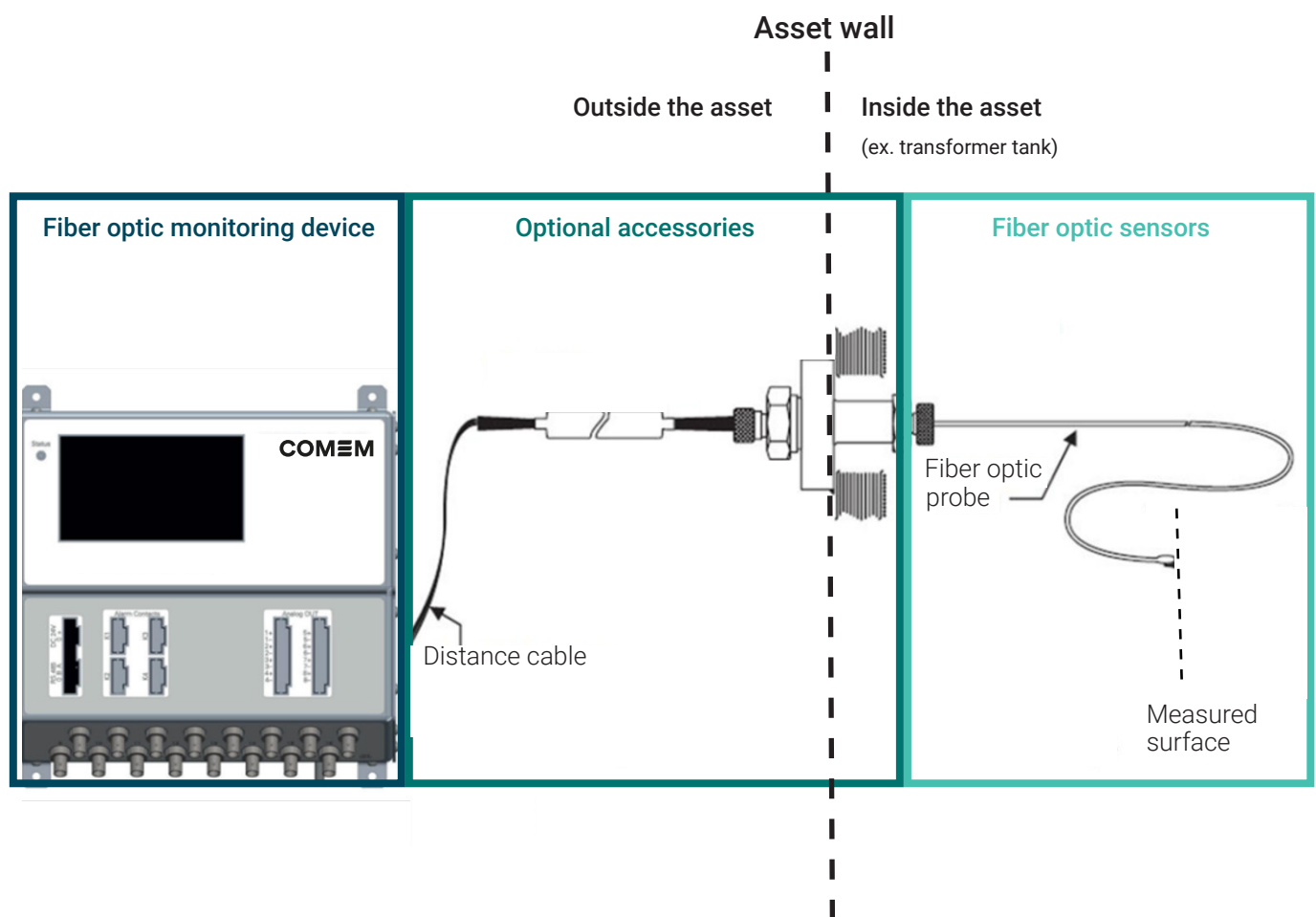
● Pre-sales & After-sales support

- Product identification
- Technical inquiries
- Calibration services
- Tests

● Turnkey & customized solution

- Product identification
- Technical inquiries
- Calibration services
- Tests

Fiber optic temperature monitoring system overview



www.comem.com

The data and illustrations are not binding. We reserve the right to modify the contents of this document without prior notice following the technical and product developments.

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