

FIBER OPTIC SENSORS FOR FOTS100, FOTS100A, AND FOTS200

FOTS100A

TSD180*: Rectal temp probe for mice and rats
TSD180A: Rectal temp probe for mice and rats
TSD181*: Surface temp probe for large animals
TSD181A: Surface temp probe for large animals
TSD182*: Rectal temp probe for mice and rats
TSD182A: Rectal temp probe for mice and rats
TSD183: Rectal temp probe

TSD183A: Rectal temp probe
TSD184: Rectal temp probe
TSD184A: Rectal temp probe
FOTS100A-ADAPT probe adapter

FOTS200

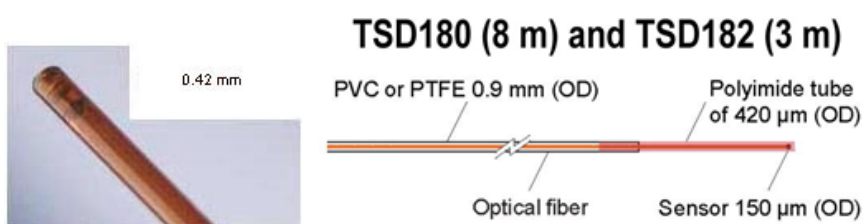
TSD380: High-field rectal temp
TSD381**: High-field surface temp

*Requires FOTS100A-ADAPT to be used with FOTS100A

**Temporarily unavailable

TSD180 & TSD182 FO RECTAL TEMPERATURE PROBE

For mice and rats, 420 μ m OD Polyimide tubing, 900 μ m OD tight buffer PVC, 8 m (TSD180), 3 m (TSD182). The Polyimide round tubing protects the sensing element while its flexibility and rigidity provide excellent pushability.



TSD181 FO SURFACE TEMPERATURE PROBE

For cats, dogs, primates; 3 mm OD Kevlar reinforced PVC cable; 8 m cable. Cable sheath rated up to 85° C.

MRI Use: MR Conditional

Condition: Max MR field strength 3T; FOTS100 module stays in the control room.



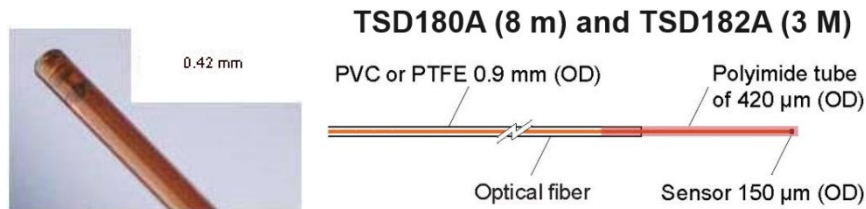
TSD180, TSD182 and TSD181 Specifications

| SPECS | TSD180 and TSD182 | TSD181 |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| Temperature range: | 0° C to +85° C (other ranges AUR) | |
| Response Time: | 250 ms and better | 1.5 sec. typical |
| Temperature operating & calibrated range: | 20° C to 45° C (other ranges AUR) | |
| Accuracy: | $\pm 0.2^{\circ}$ C (Total accuracy over the calibrated range including both signal conditioner and sensor errors) | $\pm 0.3^{\circ}$ C (Total accuracy over the calibrated range including both signal conditioner and sensor errors) |
| Resolution: | 0.05° C | |

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|-----------------------------------|-----------------------------------------------------------|-------------------------------------|
| Operating humidity range: | 0-100% | |
| MRI/EMI/RFI susceptibility: | Complete immunity | |
| Calibration: | NIST traceable | |
| Optical connector: | ST standard | |
| Cable sheathing: | 420 µm OD of Polyimide tubing; 900 µm OD tight buffer PVC | 3 mm OD Kevlar reinforced PVC cable |
| Cable length: | 8 m (TSD180/181) 3 m (TSD182) | |
| Signal conditioner compatibility: | FOTS100 system or FOTS100A with FOTS100A-ADAPT adapter | |
| Interface: | FOTS100 is a standalone Fiber Optic Temperature System | |
| Optional interface: | MP200/160 or MP150 System via FOTS100 and CBL101 | |

TSD180A & TSD182A FO RECTAL TEMPERATURE PROBES

For mice and rats, 420 µm OD Polyimide tubing, 900 µm OD tight buffer PVC, 8 m (TSD180), or 3 m (TSD182). The Polyimide round tubing protects the sensing element while its flexibility and rigidity provide excellent pushability.



TSD181A FO SURFACE TEMPERATURE PROBE

For cats, dogs, primates: 3 mm OD Kevlar reinforced PVC cable; 8 m cable. The glass tube at the end of the probe provides a robust protection over the sensing element as well as a firm connection from sensor to cable. Cable sheath rated up to 85° C.

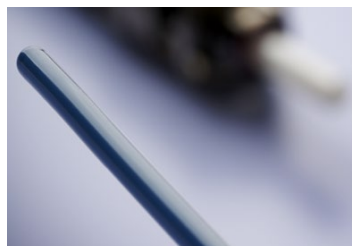
MRI Use: **MR Conditional**
Condition: Max MR field strength 3T; FOTS100A module stays in the control room. (**Note:** for high field strength, Use FOTS200 with TSD380 series probes.)



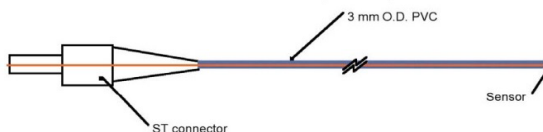
TSD180A, TSD182A, and TSD181A Specifications

| SPECS | TSD180A and TSD182A | TSD181A |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
| Temperature range: | 0° C to +85° C (other ranges AUR) | |
| Response Time: | 250 ms and better | 1.5 sec. typical |
| Temperature operating & calibrated range: | 20° C to 45° C (other ranges AUR) | |
| Accuracy: | ±0.2° C (Total accuracy over the calibrated range including both signal conditioner and sensor errors) | ±0.3° C (Total accuracy over the calibrated range including both signal conditioner and sensor errors) |
| Resolution: | 0.05° C | |
| Operating humidity range: | 0-100% | |
| MRI/EMI/RFI susceptibility: | Complete immunity | |
| Calibration: | NIST traceable | |
| Optical connector: | LC/APC | |
| Cable sheathing: | 420 µm OD of Polyimide tubing; 900 µm OD tight buffer PVC | 3 mm OD Kevlar reinforced PVC cable |
| Cable length: | 8 m (TSD180/181) 3 m (TSD182) | |
| Signal conditioner compatibility: | FOTS100A system | |
| Interface: | FOTS100A is a standalone Fiber Optic Temperature System | |
| Optional interface: | MP200/160 System via FOTS100A and CBLEPM, CBL100, then INISOA or CBL122 to connect to AMI100D. MP150 via INISOA to HLT100C. | |

TSD183/TSD183A & TSD184/TSD184A FO RECTAL TEMPERATURE PROBES



TSD183/TSD183A (8 m) and TSD184/TSD184A (3 m)



For cats, dogs, primates: This fiber optic rectal temperature probe features a 3 mm OD PVC tubing with 8-meter (TSD183 and TSD183A) and 3-meter (TSD184 and TSD184A) cable lengths. This probe uses a Gallium arsenide (GaAs) crystal as the temperature transduction mechanism to provide up to ±.3° C sensor accuracy.

MRI Use: **MR Conditional**

Condition: Max MR field strength 3T; FOTS100A module stays in the control room. (**Note:** for high field strength, Use FOTS200 with TSD380 series probes.)

TSD183, TSD183A, TSD184, AND TSD184A SPECIFICATIONS

| SPECS | TSD183 and TSD184 | TSD183A and TSD 184A |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------|
| Response Time: | 1.5 sec. typical | |
| Temperature operating range: | 20° C to +45° C (other ranges AUR) | |
| Accuracy: | ±0.3° C (Total accuracy over the calibrated range including both signal conditioner and sensor errors) | |
| Resolution: | 0.01° C | |
| Operating humidity range: | 0-100% | |
| MRI/EMI/RFI susceptibility: | Complete immunity | |
| Calibration: | NIST traceable | |
| Optical connector: | ST standard | |
| Cable sheathing: | 3 mm OD PVC cable | |
| Cable length: | 8 m (TSD183/TSD183A) 3 m (TSD184/TSD184A) | |
| Signal conditioner compatibility: | FOTS100 system or FOTS100A with FOTS100A-ADAPT adapter | FOTS100A system |
| Interface: | FOTS100A is a standalone Fiber Optic Temperature System | |
| Optional interface: | MP200/160 System via FOTS100A and CBLEPM, CBL100, then INISOA or CBL122 to connect to AMI100D. MP150 via INISOA to HLT100C. | |

TSD380/TSD381** HIGH FIELD FIBER OPTIC TEMPERATURE SENSORS



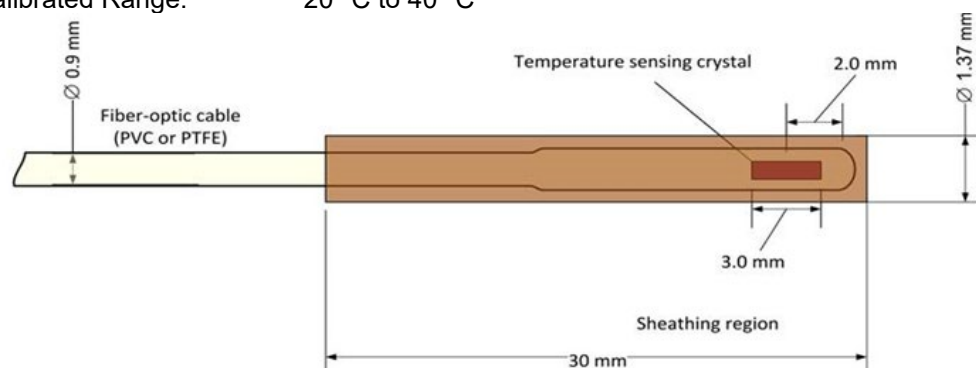
The TSD380 Rectal temperature sensor and TSD381* Surface temperature sensor are high-accuracy fiber optic temperature probes. Both sensors are suitable for use in high field MRI environments greater than 3T.

MRI Use: MR Conditional

Condition: MR field strength > 3T; FOTS200 module stays in the control room.

TSD380/381* Specifications

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|------------------------------|---------------------------------|
| Cable Sheath (OD): | TSD380: 0.9 mm, TSD381*: 3.0 mm |
| Cable Length: | 8.0 meters |
| Sensor Tip Material: | GT standard; 1.2 mm OD |
| Sensor Tip Material Length: | 7.0 mm |
| Connector: | SC connector to FOTS200 System |
| Temperature Operating Range: | 0° C to 85° C |
| Specific Calibrated Range: | 20° C to 40° C |



FOTS100A-ADAPT ADAPTER FOR LEGACY TEMPERATURE PROBES

This sensor adapter is required for the FOTS100A System “HandySens” module to accept temperature probes TSD180, TSD181, TSD182, TSD183, and TSD184.

Note: Temperature probes with “A” suffix— TSD180A, TSD181A, TSD182A, TSD183A, and TSD184A—are directly compatible with the FOTS100A System “HandySens” module without an adapter, but they are not compatible with the older FOTS100 System. Labs that have both FOTS100A and FOTS100 need the adapter to use TSD180, TSD181, TSD182, TSD183, and TSD184 with the newer system.

