



# Endurance® Series

## Accessories

### Electrical Accessories

#### Multi-conductor cables\* with M16 connector



The 12-wire cables are used for wiring the Endurance sensors with the 24 VDC power supply, all inputs, outputs, and the RS485 interface. A terminal strip is not included.

High temperature cable:		E-2CCB4		Ambient temperatures: UL-rated at -80 °C to 200 °C (-112 °F to 390 °F)  Material: cable is Teflon coated
		4 m (13 ft.)		
		E-2CCB8		
		8 m (26 ft.)		
		E-2CCB15		
		15 m (50 ft.)		
Low-temperature cable		E-2CCB30		
		30 m (100 ft.)		
		E-2CCB60		
		60 m (200 ft.)		
		E-2CLTCB4		
		4 m (13ft.)		Ambient temperatures: -40 °C to 85 °C (-40 °F to 185 °F)  Material: cable is PUR-11Y (Polyurethane) coated (Halogen free, Silicon free)
		E-2CLTCB8		
		8 m (26 ft.)		
		E-2CLTCB15		
		15 m (50 ft.)		
	E-2CLTCB30			
	30 m (100 ft.)			
	E-2CLTCB60			
	60 m (200 ft.)			

Note: Power supply maximum distance 60 m (200') from unit

\* Cable doesn't include a terminal block. Please order E-TB or E-TBN4, if you want to include a terminal block.

#### Ethernet cables with M12, RJ45 connector for access to PoE, Ethernet

	E-ETHCB		7.5 m (25 ft.)	Ambient temperatures: -80 °C to 180 °C (-112 °F to 356 °F)  Material: cable is Teflon coated.
	E-ETHCB10		10 m (33 ft.)	
	E-ETHLTCB		7.5 m (25 ft.)	Ambient temperatures: -40 °C to 80 °C (-40 °F to 176 °F)  Material: cable is PUR (Polyurethane) coated
	E-ETHLTCB25		25 m (80 ft.)	
	E-ETHLTCB50		50 m (160 ft.)	

#### Fiber-optic cables (for fiber-optic sensors only)

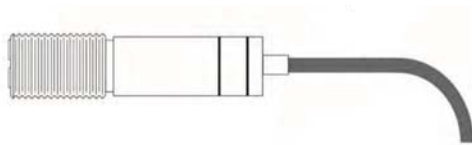
The fiber-optic cable is a sealed, stainless-steel armor sheath covering the fiber optic bundle. It withstands ambient temperatures up to 200 °C (390 °F), optional up to 315 °C (599 °F).

	EF1R and EF1M models		EF2R and EF2M models	
Low temperature	O1BL	1 m (3 ft.)	O1BL	1 m (3 ft.)
	O3BL	3 m (10 ft.)	O3BL	3 m (10 ft.)
	O6BL	6 m (20 ft.)	O6BL	6 m (20 ft.)
	10BL	10 m (33 ft.)	10BL**	10 m (33 ft.)
	22BL	22 m (72 ft.)		
High temperature	O1BH	1 m (3 ft.)	O1BH	1 m (3 ft.)
	O3BH	3 m (10 ft.)	O3BH	3 m (10 ft.)
	O6BH	6 m (20 ft.)	O6BH	6 m (20 ft.)
	10BH	10 m (33 ft.)	10BH**	10 m (33 ft.)
	22BH	22 m (72 ft.)		

\*\* Not available with EF2ML and EF2RL

## (Electrical accessories)

### Spare Parts (for fiber-optic sensors only)



### EF1R Spare optical heads and fiber-optic cable assemblies

EF1R Spare optical heads			(Focus options)
EF1RL-F2	EF1RM-F2	EF1RH-F2	sensor head with F2 (Standard Focus) focused at infinity ( $\infty$ )
EF1RL-FO	EF1RM-FO	EF1RH-FO	sensor head with FO (Narrow Focus) focused at 100 mm (4")
EF1RL-F1	EF1RM-F1	EF1RH-F1	sensor head with F1 (Close Focus) focused at 300 mm (12")

### EF1R Spare fiber-optic cables (non-laser only)

Low-temperature cables	High-temperature cables	Length
EF1RCB1BL	EF1RCB1BH	1 m (3 ft.)
EF1RCB3BL	EF1RCB3BH	3 m (10 ft.)
EF1RCB6BL	EF1RCB6BH	6 m (20 ft.)
EF1RCB10BL	EF1RCB10BH	10 m (33 ft.)
EF1RCB22BL	EF1RCB22BH	22 m (72 ft.)



### EF2R Spare optical heads and fiber-optic cable assemblies

EF2R Spare optical heads		(Focus options)
EF2RL-F2	EF2RH-F2	sensor head with F2 (Standard Focus) focused at infinity ( $\infty$ )
EF2RL-FO	EF2RH-FO	sensor head with FO (Narrow Focus) focused at 100 mm (4")
EF2RL-F1	EF2RH-F1	sensor head with F1 (Close Focus) focused at 300 mm (12")



### EF2R Spare fiber-optic cables (non-laser only)

EF2RL Low-temperature cables	EF2RL High-temperature cables	Length
EF2RLCB1BL	EF2RLCB1BHH	1 m (3 ft.)
EF2RLCB3BL	EF2RLCB3BH	3 m (10 ft.)
EF2RLCB6BL	EF2RLCB6BH	6 m (20 ft.)
EF2RLCB10BL	EF2RLCB10BH	10 m (33 ft.)
EF2RH Low-temperature cables	EF2RH High-temperature cables	Length
EF2RHCB1BL	EF2RHCB1BH	1 m (3 ft.)
EF2RHCB3BL	EF2RHCB3BH	3 m (10 ft.)
EF2RHCB6BL	EF2RHCB6BH	6 m (20 ft.)
EF2RHCB10BL	EF2RHCB10BH	10 m (33 ft.)

**(Electrical accessories)**

	E-TB	<p><b>Endurance terminal block accessory</b> for connecting the Endurance sensor with the customer's industrial environment</p>
	E-TBN4	<p><b>Endurance terminal block in an IP65 (NEMA 4) enclosure</b> with sealed cable inlets The inside the enclosure installed terminal block is equal to the above-described E-TB type.</p>
	E-SYSPS	<p><b>Industrial power supply, DIN rail mount</b> delivers isolated dc power and provides short circuit and overload protection</p> <p>Protection class            prepared for class II equipment Environmental protection IP20 Operating temperature    -25 °C to 55 °C (-13 °F to 131 °F) AC input                      100 – 240 VAC, 44 - 66 Hz DC output                    24 VDC / 1.3 A</p>
	E-PS	<p><b>Power supply &amp; Endurance terminal block mounted in an IP65 (NEMA 4) enclosure</b></p> <p>AC input                      100 – 240 VAC, 50 - 60 Hz DC output                    24 VDC / 1.1 A Ambient temperatures    0 °C to 50 °C (32 °C to 120 °F) Humidity                     20 to 90%, non-condensing</p>
	E-POE	<p><b>PoE Injector</b> provides power and also acts as a single Ethernet hub.</p> <p>AC input                      100 – 240 VAC, 50 - 60 Hz PoE power                    up to 15.4 W PoE output ports            1 RJ-45                            10/100/1000 Mbps Standards                    IEEE 802.3, IEEE 802.3u,                                       IEEE 802.3af (PoE standard)</p>
	E-2CCON	<p><b>12-socket DIN Cable connector</b> for multi-conductor cable</p>
	E-M5PK	<p><b>Ircan® Modline® 5 patch cable kit</b> allows Endurance use with existing Modline 5 cables.</p>
	E-M5PKMC	<p><b>Endurance patch cable kit</b> allows Modline 5 use with existing Endurance cables</p>

**(Electrical accessories)**

	E-USB485	<b>USB to RS232/422/485 converter</b> for the direct adaptation of an Endurance series device to a standard PC via the USB-interface
	E-CP	<b>Cooling platform for electronics housing</b> can be used for ambient temperatures up to 150 °C (302 °F)




**Mechanical/Optical Accessories for Integrated Sensors only**

	E-AP	<b>Air purge collar</b> to keep dust, moisture, airborne particles and vapors away from the lens
	E-PA	<b>Pipe adapter</b> to adapt a 300 mm (12") sighting tube to the Endurance device
	E-MN	<b>Mounting nut</b> (spare) to fix and secure the Endurance device to any kind of mounting brackets (inner thread of 36.9 mm (1.5") UNC)
	E-FB	<b>Fixed bracket</b> (spare) to mount the Endurance sensor in a fixed location (swivel range of about 45°)
	E-AB	<b>Adjustable bracket</b> to mount the Endurance sensor in a moveable position. It allows pitch and swivel of the sensor-sighting axis in a range of approximately 45° per axis
	E-SB	<b>Swivel bracket</b> to mount the Endurance sensor in a moveable position. It allows pitch (0° – 45°) and swivel (0° – 360°) of the sensor-sighting axis
	E-RA	<b>Right angle mirror</b> for targets at right angles to sensor axis The right angle mirror has an air-purge adapter.

**(Mechanical/Optical Accessories for Integrated Sensors only)**

	E-M5WJAK	<p><b>Modline 5 WaterJacket (WJA) adapter kit</b> is required to modify the WJA to allow the Endurance sensor to be secured in the Modline 5 WJA.</p>
	E-UAA	<p><b>Endurance universal adapter accessory</b> clamps around the Endurance sensor and can be used to mount it to an existing Modline 5 installation, where a RAM (Right Angle Mount) is used, a tripod, or any device using a 1/4–20 UNC threaded mounting hardware</p>
	E-AK-7	<p><b>Adapter kit</b> for mounting Endurance into existing WJ-5 water jacket installations</p>
	E-MF-7	<p><b>Mounting flange</b> allows an Endurance sensor to be mounted into an existing Ircon flange mount installation  This accessory needs to be used in conjunction with the E-MFA-7 flange adapter.</p>
	E-MFA-7	<p><b>Flange adapter</b> to allow Endurance sensor to mount to MF-7 mounting flange</p>
	E-PC	<p><b>Protection cap kit</b> for Endurance sensor M12 and M16 sockets</p>
	E-ECAP	<p><b>Replacement glass end-cap</b> is the replacement of a defect or damaged Endurance end cap</p>
	E- PW	<p><b>Protective front window, including O-Ring</b> The protective front window with the needed O-ring is orderable as a spare part.</p>
	E-PFEC	<p><b>Polarizing filter end cap</b> The filter protects the eyes when sighting on bright, high temperature targets through the visual sighting port. The filter does not affect measured energy.  The polarizing filter will not fit in the standard end cap.</p>



## Mechanical/Optical Accessories for Fiber-optic Sensors only

	E-FOMB	<b>Adjustable mounting bracket</b> to mount the Endurance fiber-optic head (incl. 2 mounting nuts)
	E-FOHAPA	<b>Air purge collar</b> to keep dust, moisture, airborne particles, and vapors away from the optical head's lens  It includes a stainless steel sighting-tube that threads onto the front of the air purge collar.
	<b>Fitting System</b> Flexible accessory selections allow you to pick and choose the accessories you need  E-FORFQP	<b>Stainless steel air purge with quick release fitting  and sapphire window</b> air connector (1/4" NPT)
	E-FORFAP	<b>Stainless steel air purge with quick release fitting,  sapphire window (E-FORFQP) and stainless steel tube</b> (203 mm/8 in)
	E-FORFMF	<b>Stainless steel air purge with quick release fitting,  sapphire window (E-FORFQP) and stainless steel 4-bolt  mounting flange</b>
	E-FORFMC	<b>Stainless steel air purge with quick release fitting,  sapphire window (E-FORFQP) and stainless steel  gravity-held mounting base</b>
	E-BF1WINDOW	<b>Sapphire protective window</b> mounted in stainless steel bezel
	E-FOXH3	<b>High temperature fiber-optic housing with air-knife  purge and sapphire protective window</b> 3 m (10 ft.) air/protection hose, for extreme environments with ambient temperature <= 450 °C (842 °F)
	E-FOXH6	<b>High temperature fiber-optic housing with air-knife  purge and sapphire protective window</b> 6 m (20 ft.) air/protection hose, for extreme environments with ambient temperature <= 450 °C (842 °F)

**ThermoJacket and Related Accessories**

	<p>E-TJ1</p>	<p><b>ThermoJacket housing</b> to use Endurance series sensing heads in ambient temperatures up to 315 °C (600 °F) The ThermoJacket provides water and/or air-cooling and air purging in one unit. Ambient temperatures: water cooling 315 °C (600 °F) air cooling 115 °C (240 °F)</p>
	<p>A-TJ-MF</p>	<p><b>Mounting flange for ThermoJacket</b> to mount the ThermoJacket to walls, existing ports or flanges.</p>
	<p>A-TJ-MB</p>	<p><b>Adjustable mounting base for ThermoJacket</b> provides stable, permanent placement of the ThermoJacket while allowing the ThermoJacket to swivel 360° and pitch 90° forward.</p>
	<p>A-TJ-GTQ</p>	<p><b>Blast gate assembly with quartz window (HT model)</b> to protect the sensor, and perform tasks without exposure to hot or explosive target areas. Specification: max. 870 °C (1600 °F)</p>
	<p>A-PA-A</p>	<p><b>Adjustable pipe adapter assembly</b> can be placed permanently on a surface and aimed in any direction within a 45° radius</p>
	<p>A-MF-ST</p>	<p><b>Mounting flange for use with sighting tubes</b> to adapt different kind of sighting tubes to the Endurance sensor in ThermoJacket installation</p>
	<p>A-ST-CER</p>	<p><b>30 cm (12") sighting tube, ceramic</b> Use the A-ST-CER ceramic sighting tube in conjunction with the A-MF-ST tube-mounting flange in temperature measurement environments where reflected energy is a problem Specification: up to 1500 °C (2730 °F)</p>
	<p>A-ST-SS</p>	<p><b>30 cm (12") sighting tube, stainless steel</b> Use the A-ST-SS stainless steel sighting tube in conjunction with the A-MF-ST tube-mounting flange in temperature measurement environments where reflected energy is a problem Specification: up to 800 °C (1470 °F)</p>

**(ThermoJacket and Related Accessories)**

	<p>A-ST-CS-45</p>	<p><b>30 cm (12") sighting tube, carbon steel</b> with 45 degree end cut and slotted weep hole at base. Use the A-ST-CS-45 carbon steel sighting tube in conjunction with the A-MF-ST tube-mounting flange in temperature measurement environments where reflected energy is a problem. Specification: up to 800 °C (1470 °F)</p>
	<p>E-TJET</p>	<p><b>Extraction tool</b> eases the removal of an Endurance sensor from the ThermoJacket protective enclosure</p>

**Flow Regulator Accessories** (for use with cooling/purging options)

	<p>A-TJ-APR</p>	<p><b>Air purging flow regulator assembly</b> with air filter to control air purging</p>
	<p>A-TJ-AFR</p>	<p><b>Cooling air flow regulator</b> (high capacity) to control air-cooling in high ambient temperature environments</p>
	<p>A-TJ-WFR</p>	<p><b>Water flow regulator</b> to control water-cooling</p>



**Line Scanning Accessory**



SSA

**SpotScan™**

When mounted to the front of the Endurance sensor, the SpotScan accessory allows the user to gather temperature information over a larger area on the target, due to the scanning mechanism inside the accessory.

Scan angle	2 - 15°
Scan Frequency	0.5 - 5 Hz
Operating Temperature	0 °C - 60 °C (32 °F - 140 °F)
Power Supply	18 - 32 VDC, 12W
Enclosure Rating	IP65 (when sensor is fitted in accessory)
Window material	N-BK7

**The Fluke Process Instruments Guarantee**

The Endurance Series is supported by a 4 year warranty. With a network of trained representatives and agents in over one hundred (100) countries and offices located in the U.S., Germany and China, we provide local service and support you can rely on time after time.

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