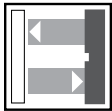




Basic Series 18 mm Diameter Cylindrical Sensors

- Up to 50% longer sensing ranges than previous versions
- Housing lengths as short as 60 mm (2 3/8")
- Cost-effective, compact sensor in a rugged metal housing



Diffuse Mode

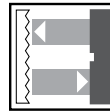
See pages 384-385

Features:

- Light on/dark on mode determined by wiring
- Adjustable sensitivity

Sensing Ranges: 200 mm, 500 mm

Outputs: NPN, PNP



Retro-Reflective Mode

See page 386

Features:

- Light on/dark on mode determined by wiring
- Polarized filters detect shiny targets

Sensing Range: 4 m

Outputs: NPN, PNP



Thru-Beam Mode

See pages 387-388

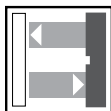
Features:

- Laser model has 1.5 mm diameter light spot
- Light on/dark on mode determined by wiring

Sensing Range: 10 m

Outputs: NPN, PNP

See page 389-392 for Basic Series 18 mm diameter wiring and dimensions.



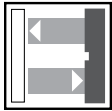
Diffuse Mode

Specifications

SENSING RANGE	14-200 mm	14-200 mm	14-500 mm	14-500 mm
SENSITIVITY ADJUSTMENT	Yes	Yes	Yes	Yes
MODEL NUMBER(S)	OBT200-18GM60-E4	OBT200-18GM60-E4-V1	OBT500-18GM60-E4	OBT500-18GM60-E4-V1
	OBT200-18GM60-E5 •	OBT200-18GM60-E5-V1 ⚡	OBT500-18GM60-E5 •	OBT500-18GM60-E5-V1 ⚡
OUTPUT: Transistor, Normally Open and Normally Closed	-E4 1 NPN	1 NPN	1 NPN	1 NPN
	-E5 1 PNP	1 PNP	1 PNP	1 PNP
LOAD CURRENT	100 mA max.	100 mA max.	100 mA max.	100 mA max.
VOLTAGE DROP	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC	≤ 2.5 VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION	Yes	Yes	Yes	Yes
REVERSE POLARITY PROTECTION	Yes	Yes	Yes	Yes
SUPPLY VOLTAGE	10-30 VDC	10-30 VDC	10-30 VDC	10-30 VDC
VOLTAGE RIPPLE	10%	10%	10%	10%
LED(s)	Yes (2)*	Yes (2)*	Yes (2)*	Yes (2)*
CURRENT CONSUMPTION	≤ 30 mA	≤ 30 mA	≤ 30 mA	≤ 30 mA
OPERATING MODE	Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME	≤ 1.0 ms	≤ 1.0 ms	≤ 1.0 ms	≤ 1.0 ms
READINESS DELAY	≤ 25 ms	≤ 25 ms	≤ 25 ms	≤ 25 ms
HYSTERESIS	< 15%	< 15%	< 15%	< 15%
SWITCHING FREQUENCY	500 Hz	500 Hz	500 Hz	500 Hz
STANDARDS	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2	EN 60947-5-2
PROTECTION (IEC)	IP67	IP67	IP67	IP67
LIGHT SOURCE	Infrared LED 880 nm	Infrared LED 880 nm	Infrared LED 880 nm	Infrared LED 880 nm
AMBIENT LIGHT RESISTANCE	≤ 10,000 lux	≤ 10,000 lux	≤ 10,000 lux	≤ 10,000 lux
TEMPERATURE RANGE	WORKING -13 °F to +131 °F	-13 °F to +131 °F	-13 °F to +131 °F	-13 °F to +131 °F
	STORAGE -40 °F to +158 °F	-40 °F to +158 °F	-40 °F to +158 °F	-40 °F to +158 °F
HOUSING MATERIAL	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass	Nickel-plated brass
	LENS Polycarbonate	Polycarbonate	Polycarbonate	Polycarbonate
WEIGHT	4.3 oz	2.1 oz	4.3 oz	2.1 oz
APPROVALS				
ELECTRICAL CONNECTION	2-meter cable, PVC covered 4-conductor, #22 AWG	Quick disconnect type V1	2-meter cable, PVC covered 4-conductor, #22AWG	Quick disconnect type V1
ADDITIONAL DATA	See pages 389-392			

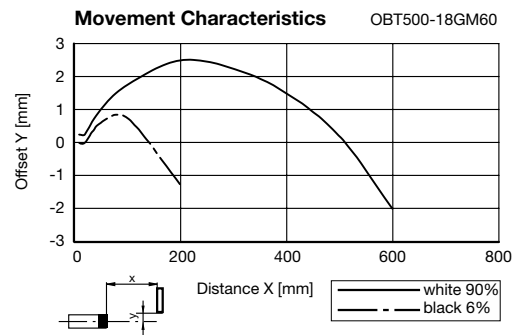
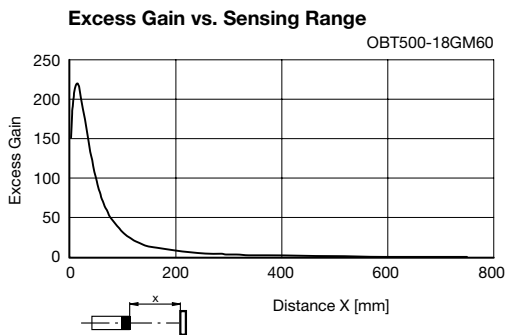
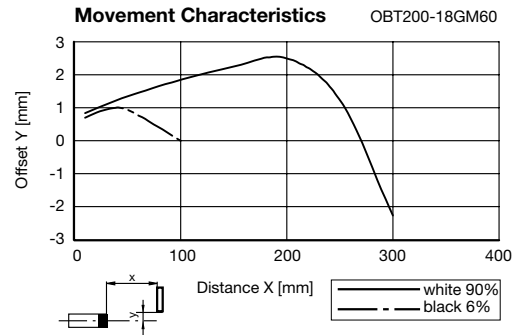
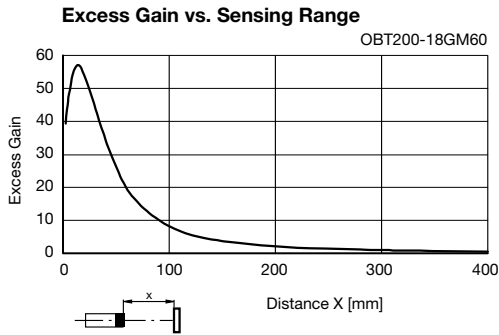
*See dimensional drawings for LED functions.

- ⚡ Stocked item
- Typical delivery 4 weeks or less
Consult factory for all other models



Diffuse Mode

Sensing Characteristics



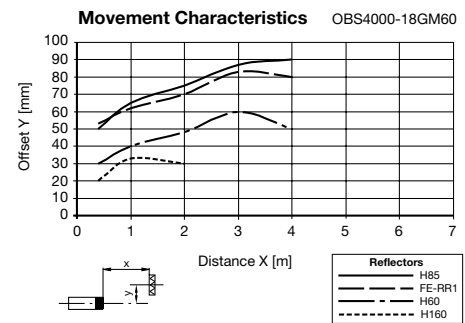
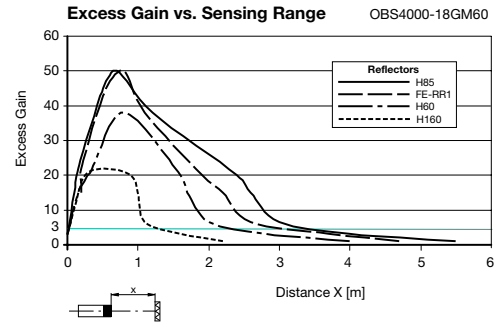


Retro-Reflective Mode

Specifications		0-4 m	0-4 m
SENSING RANGE		0-4 m	0-4 m
SENSITIVITY ADJUSTMENT		Yes	Yes
POLARIZED FILTER		Yes	Yes
MODEL NUMBER(S)		OBS4000-18GM60-E4 ⚡	OBS4000-18GM60-E4-V1
		OBS4000-18GM60-E5 ●	OBS4000-18GM60-E5-V1 ⚡
OUTPUT: Transistor, Normally Open and Normally Closed	-E4	1 NPN	1 NPN
	-E5	1 PNP	1 PNP
LOAD CURRENT		100 mA max.	100 mA max.
VOLTAGE DROP		≤ 2.5 VDC	≤ 2.5 VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION		Yes	Yes
REVERSE POLARITY PROTECTION		Yes	Yes
SUPPLY VOLTAGE		10-30 VDC	10-30 VDC
VOLTAGE RIPPLE		10%	10%
LED(s)		Yes (2)*	Yes (2)*
CURRENT CONSUMPTION		≤ 25 mA	≤ 25 mA
OPERATING MODE		Light on/dark on	Light on/dark on
RESPONSE TIME		≤ 1.0 ms	≤ 1.0 ms
READINESS DELAY		≤ 25 ms	≤ 25 ms
HYSTERESIS		< 15%	< 15%
SWITCHING FREQUENCY		500 Hz	500 Hz
STANDARDS		EN 60947-5-2	EN 60947-5-2
PROTECTION (IEC)		IP67	IP67
LIGHT SOURCE		Visible red LED 660 nm	Visible red LED 660 nm
AMBIENT LIGHT RESISTANCE		≤ 10,000 lux	≤ 10,000 lux
TEMPERATURE RANGE	<i>WORKING</i>	-13 °F to +131 °F	-13 °F to +131 °F
	<i>STORAGE</i>	-40 °F to +158 °F	-40 °F to +158 °F
HOUSING MATERIAL		Nickel-plated brass	Nickel-plated brass
	<i>LENS</i>	PMMA	PMMA
WEIGHT		4.3 oz	2.1oz
APPROVALS			
ELECTRICAL CONNECTION		2-meter cable, PVC covered 4-conductor, #22 AWG	Quick disconnect type V1
ADDITIONAL DATA		See pages 389-392	

*See dimensional drawings for LED functions.

Sensing Characteristics





- ⚡ Stocked item
- Typical delivery 4 weeks or less
Consult factory for all other models



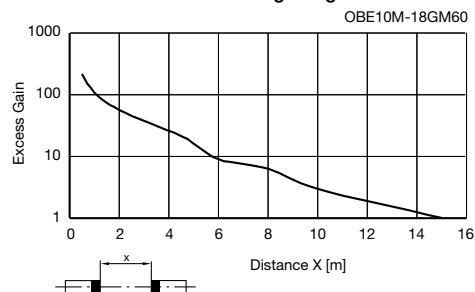
Thru-Beam Mode

Specifications

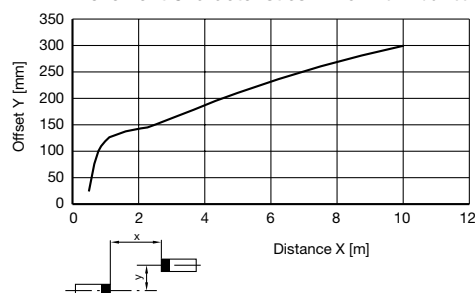
SENSING RANGE		0-10 m	0-10 m
SENSITIVITY ADJUSTMENT		Yes	Yes
MODEL NUMBER(S)	Transmitter	OBE10M-18GM60-S	OBE10M-18GM60-S-V1 •
	Receiver	OBE10M-18GM60-E4	OBE10M-18GM60-E4-V1
		OBE10M-18GM60-E5	OBE10M-18GM60-E5-V1 •
OUTPUT: Transistor, Normally Open and Normally Closed	-E4	1 NPN	1 NPN
	-E5	1 PNP	1 PNP
LOAD CURRENT		100 mA max.	100 mA max.
VOLTAGE DROP		≤ 2.5 VDC	≤ 2.5 VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION		Yes	Yes
REVERSE POLARITY PROTECTION		Yes	Yes
SUPPLY VOLTAGE		10-30 VDC	10-30 VDC
VOLTAGE RIPPLE		10%	10%
LED(s)		Yes (2)*	Yes (2)*
CURRENT CONSUMPTION		≤ 25 mA	≤ 25 mA
OPERATING MODE		Light on/dark on	Light on/dark on
RESPONSE TIME		≤ 1.5 ms	≤ 1.5 ms
READINESS DELAY		≤ 25 ms	≤ 25 ms
HYSTERESIS		< 15%	< 15%
SWITCHING FREQUENCY		300 Hz	300 Hz
STANDARDS		EN 60947-5-2	EN 60947-5-2
PROTECTION (IEC)		IP67	IP67
LIGHT SOURCE		Infrared LED 880 nm	Infrared LED 880 nm
AMBIENT LIGHT RESISTANCE		≤ 10,000 lux	≤ 10,000 lux
TEMPERATURE RANGE	WORKING	-13 °F to +131 °F	-13 °F to +131 °F
	STORAGE	-40 °F to +158 °F	-40 °F to +158 °F
HOUSING MATERIAL		Nickel-plated brass	Nickel-plated brass
	LENS	Polycarbonate	Polycarbonate
WEIGHT		4.3 oz (per housing)	2.1 oz (per housing)
APPROVALS		CE UL SP	CE UL SP
ELECTRICAL CONNECTION		 2-meter cable, PVC covered 4-conductor, #22 AWG	 Quick disconnect type V1
ADDITIONAL DATA		See pages 389-392	

Sensing Characteristics

Excess Gain vs. Sensing Range

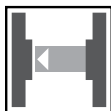


Movement Characteristics



- ⚡ Stocked item
- Typical delivery 4 weeks or less
- Consult factory for all other models

*See dimensional drawings for LED functions.



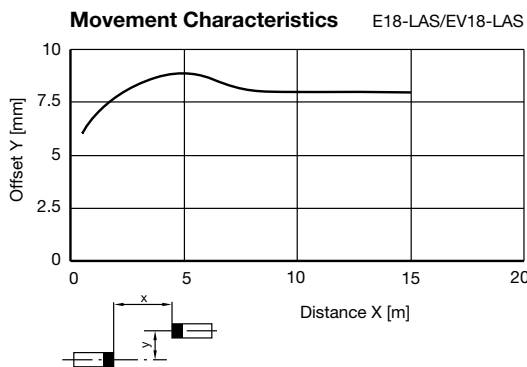
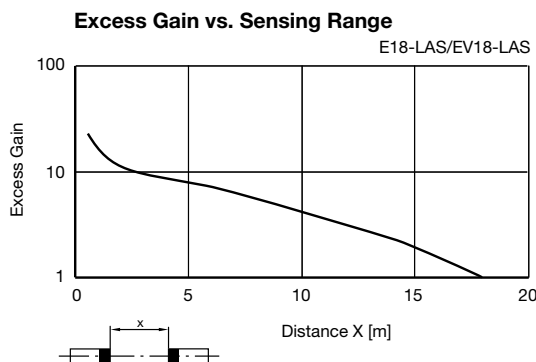
Thru-Beam Mode

Specifications		Laser
SENSING RANGE		0-10 m
SENSITIVITY ADJUSTMENT		No
SENSING HEAD		Straight
MODEL NUMBER(S)	<i>Transmitter</i>	E18-LAS/92 •
	<i>Receiver</i>	EV18-LAS/32/92 •
OUTPUT: Transistor, Normally Open and Normally Closed	<i>-E4</i>	—
	<i>-E5</i>	1 PNP
LOAD CURRENT		200 mA max.
SHORT CIRCUIT AND OVERLOAD PROTECTION		Yes
REVERSE POLARITY PROTECTION		Yes
SUPPLY VOLTAGE		10-30 VDC
VOLTAGE RIPPLE		10%
LED(s)		Yes (1)*
CURRENT CONSUMPTION		≤ 25 mA transmitter ≤ 60 mA receiver
OPERATING MODE		Light on
RESPONSE TIME		≤ 0.5 ms
SWITCHING FREQUENCY		1 kHz
STANDARDS		EN 60947-5-2
PROTECTION (IEC)		IP65
LIGHT SPOT DIAMETER		< 1.5 mm at a range of 1.5 m (1.2 mm min. target diameter)
LIGHT BEAM ANGLE		± 2° receiver
LIGHT SOURCE		Visible red laser
AMBIENT LIGHT RESISTANCE		≤ 100,000 lux
TEMPERATURE RANGE	<i>WORKING</i>	+32 °F to +140 °F
	<i>STORAGE</i>	-40 °F to +185 °F
HOUSING MATERIAL		Nickel-plated brass
	<i>LENS</i>	Glass
WEIGHT		1.6 oz (per housing)
APPROVALS		CE UL SP
ELECTRICAL CONNECTION		Quick disconnect type V1
ADDITIONAL DATA		See pages 389-392

*See dimensional drawings for LED functions.

- ⚡ Stocked item
- Typical delivery 4 weeks or less
Consult factory for all other models

Sensing Characteristics



CAUTION

LASER RADIATION —
DO NOT STARE INTO BEAM

650nm LASER LIGHT
1mW PEAK POWER

PRODUCT CONFORMS TO 21CFR1040
CLASS II LASER PRODUCT

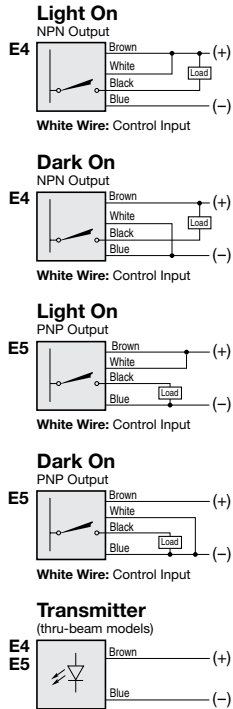
⚠ AVOID EXPOSURE — Laser radiation
is emitted from this aperture

Wiring Diagrams

DC



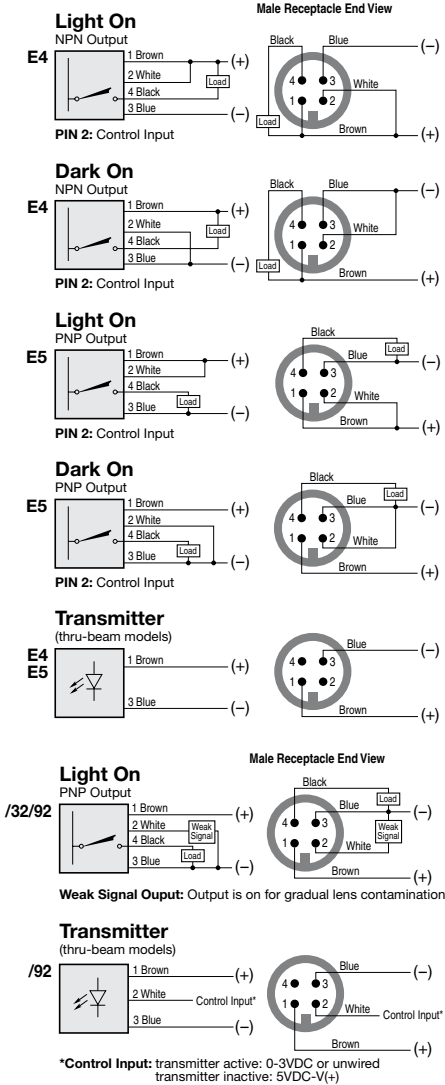
Cable Connection



Quick Disconnect

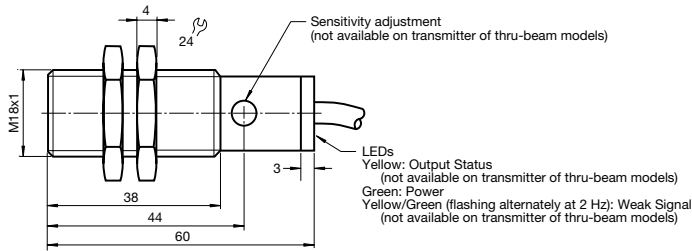
Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type

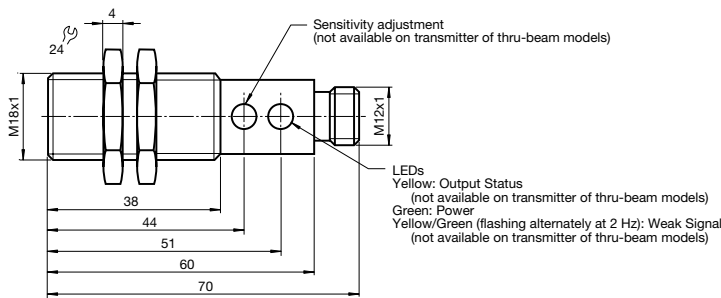


Dimensions (mm)

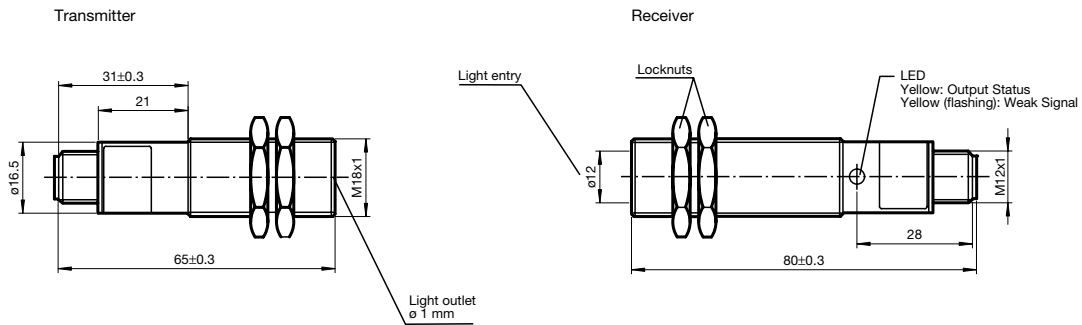
OB...-18GM60



OB...-18GM60...-V1



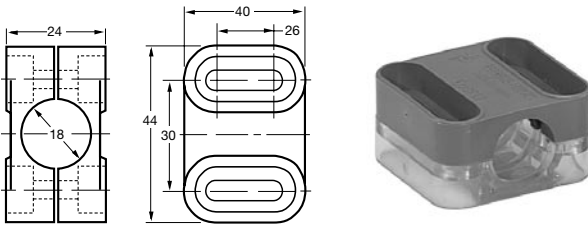
E18-LAS/EV18-LAS



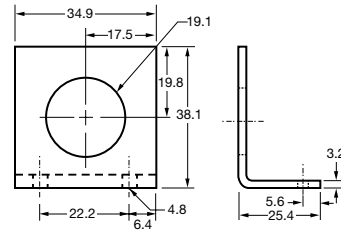
Accessories

(Dimensions in mm)

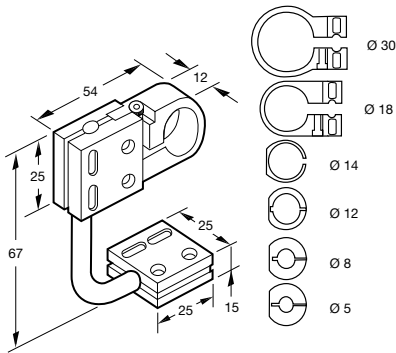
Adjustable Mounting Bracket Model BF18



Right Angle Mounting Bracket Model AB18

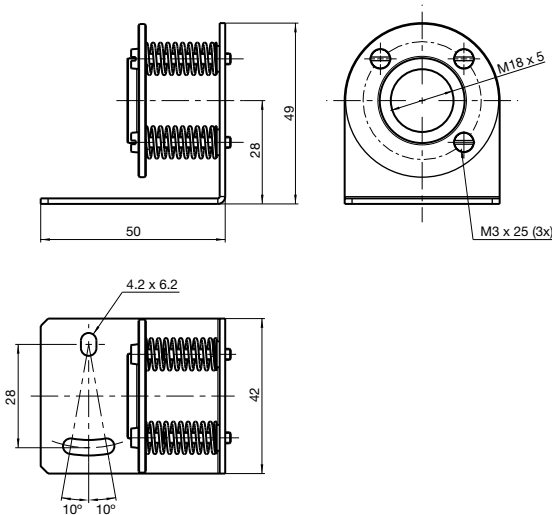


Universal Mounting Bracket Model BF5-30



Mounting Bracket Model OMH-VL18

Metal bracket for 18mm cylindrical sensors with precision sensor alignment.



90° Optical Deflector Model OSP18A

(open front for visible red light source sensors)



90° Optical Deflector Model OSP18B

(closed front for infrared light source sensors)



See pages
803-854 for
cordsets



See pages
797-802 for
reflectors



See pages 865-872
for additional
accessories

Subject to modifications without notice

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FP PEPPERL+FUCHS
SENSING YOUR NEEDS

Notes

Photoelectric Basic Series 18mm Diameter