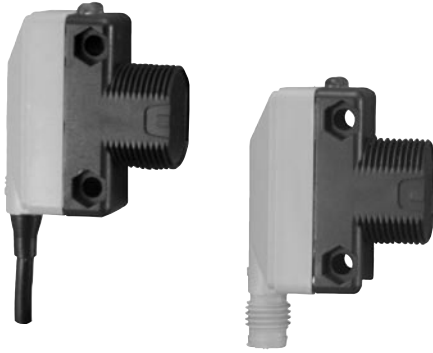




ML17 Series Tru-Vue™ Style Sensors

- Cost-effective
- Compact, versatile housing
- 4-in-1 output
- 5 connection options

Tru-Vue™

4 FOUR OUTPUTS
IN
1 ONE SENSOR

4 output options from 1 sensor:
NPN normally open, NPN normally closed,
PNP normally open, or PNP normally closed



Diffused Mode

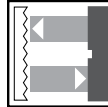
See page 2

Features:

- Sensitivity adjustment for sensing range
- 360° high-visibility LEDs

Sensing Range: 450mm

Output: 4-in-1



Retro-Reflective Mode

See pages 3-4

Features:

- Polarized and long-range nonpolarized models
- 360° high-visibility LEDs

Sensing Range: 3.5m, 6.5m

Output: 4-in-1



Thru-Beam Mode

See page 5

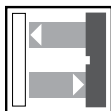
Features:

- Quick disconnect or cabled versions
- 360° high-visibility LEDs

Sensing Range: 20m

Output: 4-in-1

Photoelectric Sensors



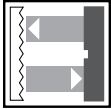
Diffused Mode

Specifications			
SENSING RANGE	10-450mm	10-450mm	10-450mm
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	100 x 100mm white test card	100 x 100mm white test card	100 x 100mm white test card
MODEL NUMBER(S)	ML17-8-450/115/136	ML17-8-450/73/136	ML17-8-450/136/143
OUTPUT	 /136	4-in-1*	4-in-1*
		–	–
SUPPLY VOLTAGE	10-30VDC	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz	500Hz
LIGHT SOURCE	Infrared LED 950nm	Infrared LED 950nm	Infrared LED 950nm
WEIGHT	1.4oz	0.3oz	0.3oz
ELECTRICAL CONNECTION	 2-meter cable, PVC covered, 4-conductor, #26AWG	 Quick disconnect type V1, integral	 Quick disconnect type V31, integral
ADDITIONAL DATA	See pages 6-8		

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Specifications		
SENSING RANGE	10-450mm	10-450mm
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	100 x 100mm white test card	100 x 100mm white test card
MODEL NUMBER(S)	ML17-8-450/115b/136	ML17-8-450/115a/136
OUTPUT	 /136	4-in-1*
		–
SUPPLY VOLTAGE	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz
LIGHT SOURCE	Infrared LED 950nm	Infrared LED 950nm
WEIGHT	0.8oz	0.8oz
ELECTRICAL CONNECTION	 150mm pigtail, PVC covered, quick disconnect type V1	 150mm pigtail, PVC covered, quick disconnect type V31
ADDITIONAL DATA	See pages 6-8	

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed



Retro-Reflective Mode

Specifications			
SENSING RANGE	0-3.5m	0-3.5m	0-3.5m
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	FE-RR1 reflector	FE-RR1 reflector	FE-RR1 reflector
REFLECTOR DISTANCE	50mm-3.5m	50mm-3.5m	50mm-3.5m
POLARIZATION FILTER	Yes	Yes	Yes
MODEL NUMBER(S)	ML17-54/115/136	ML17-54/73/136	ML17-54/136/143
OUTPUT  /136	4-in-1*	4-in-1*	4-in-1*
SUPPLY VOLTAGE	10-30VDC	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz	500Hz
LIGHT SOURCE	Visible red LED 626nm	Visible red LED 626nm	Visible red LED 626nm
WEIGHT	1.4oz	0.3oz	0.3oz
ELECTRICAL CONNECTION	 2-meter cable, PVC covered, 4-conductor, #26AWG	 Quick disconnect type V1, integral	 Quick disconnect type V31, integral
ADDITIONAL DATA	See pages 6-8		

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Specifications		
SENSING RANGE	0-3.5m	0-3.5m
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	FE-RR1 reflector	FE-RR1 reflector
REFLECTOR DISTANCE	50mm-3.5m	50mm-3.5m
POLARIZATION FILTER	Yes	Yes
MODEL NUMBER(S)	ML17-54/115b/136	ML17-54/115a/136
OUTPUT  /136	4-in-1*	4-in-1*
SUPPLY VOLTAGE	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz
LIGHT SOURCE	Visible red LED 626nm	Visible red LED 626nm
WEIGHT	0.8oz	0.8oz
ELECTRICAL CONNECTION	 150mm pigtail, PVC covered, quick disconnect type V1	 150mm pigtail, PVC covered, quick disconnect type V31
ADDITIONAL DATA	See pages 6-8	

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Photoelectric Sensors



Retro-Reflective Mode

Specifications			
SENSING RANGE	0-6.5m	0-6.5m	0-6.5m
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	FE-RR1 reflector	FE-RR1 reflector	FE-RR1 reflector
REFLECTOR DISTANCE	50mm-6.5m	50mm-6.5m	50mm-6.5m
POLARIZATION FILTER	Yes	Yes	Yes
MODEL NUMBER(S)	ML17-6/115/136	ML17-6/73/136	ML17-6/136/143
OUTPUT	 /136	4-in-1*	4-in-1*
		–	–
SUPPLY VOLTAGE	10-30VDC	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz	500Hz
LIGHT SOURCE	Visible red LED 626nm	Visible red LED 626nm	Visible red LED 626nm
WEIGHT	1.4oz	0.3oz	0.3oz
ELECTRICAL CONNECTION	 2-meter cable, PVC covered, 4-conductor, #26AWG	 Quick disconnect type V1, integral	 Quick disconnect type V31, integral
ADDITIONAL DATA	See pages 6-8		

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Specifications		
SENSING RANGE	0-6.5m	0-6.5m
SENSITIVITY ADJUSTMENT	Yes (single-turn potentiometer)	Yes (single-turn potentiometer)
REFERENCE TARGET	FE-RR1 reflector	FE-RR1 reflector
REFLECTOR DISTANCE	50mm-6.5m	50mm-6.5m
POLARIZATION FILTER	Yes	Yes
MODEL NUMBER(S)	ML17-6/115b/136	ML17-6/115a/136
OUTPUT	 /136	4-in-1*
		–
SUPPLY VOLTAGE	10-30VDC	10-30VDC
RESPONSE TIME	≤1.0ms	≤1.0ms
SWITCHING FREQUENCY	500Hz	500Hz
LIGHT SOURCE	Visible red LED 626nm	Visible red LED 626nm
WEIGHT	0.8oz	0.8oz
ELECTRICAL CONNECTION	 150mm pigtail, PVC covered, quick disconnect type V1	 150mm pigtail, PVC covered, quick disconnect type V31
ADDITIONAL DATA	See pages 6-8	

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed



Thru-Beam Mode

Specifications			
SENSING RANGE		0-20m	0-20m
SENSITIVITY ADJUSTMENT		No	No
REFERENCE TARGET		Receiver	Receiver
MODEL NUMBER(S)	Transmitter	MD17/115	MD17/73
	Receiver	MV17/115/136	MV17/73/136
OUTPUT  /136		4-in-1*	4-in-1*
		–	–
SUPPLY VOLTAGE		10-30VDC	10-30VDC
RESPONSE TIME		≤3.0ms	≤3.0ms
SWITCHING FREQUENCY		150Hz	150Hz
LIGHT SOURCE		Infrared LED 950nm	Infrared LED 950nm
WEIGHT		1.4oz (per housing)	0.3oz (per housing)
ELECTRICAL CONNECTION		 2-meter cable, PVC covered, 4-conductor, #26AWG	 Quick disconnect type V1, integral
			 Quick disconnect type V31, integral
ADDITIONAL DATA		See pages 6-8	

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Specifications			
SENSING RANGE		0-20m	0-20m
SENSITIVITY ADJUSTMENT		No	No
REFERENCE TARGET		Receiver	Receiver
MODEL NUMBER(S)	Transmitter	MD17/115b	MD17/115a
	Receiver	MV17/115b/136	MV17/115a/136
OUTPUT  /136		4-in-1*	4-in-1*
		–	–
SUPPLY VOLTAGE		10-30VDC	10-30VDC
RESPONSE TIME		≤1.0ms	≤3.0ms
SWITCHING FREQUENCY		500Hz	150Hz
LIGHT SOURCE		Visible red LED 626nm	Infrared LED 950nm
WEIGHT		0.8oz (per housing)	0.8oz (per housing)
ELECTRICAL CONNECTION		 150mm pigtail, PVC covered, quick disconnect type V1	 150mm pigtail, PVC covered, quick disconnect type V31
ADDITIONAL DATA		See pages 6-8	

*NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed

Photoelectric Sensors

ML17 Series Specifications

LOAD CURRENT	100mA max. per output
LEAKAGE CURRENT	≤10μA per output
VOLTAGE DROP	≤2VDC
SHORT CIRCUIT AND OVERLOAD PROTECTION	Yes
REVERSE POLARITY PROTECTION	Yes
VOLTAGE RIPPLE	±10%
LED(s)	Yes (2) (1 for MD17)
OPERATING MODE	Light on/dark on
CURRENT CONSUMPTION	≤25mA
READINESS DELAY	≤200ms
PROTECTION (IEC)	IP67
AMBIENT LIGHT RESISTANCE	≤10,000 lux
TEMPERATURE RANGE	WORKING: -4°F to +131°F STORAGE: -4°F to +167°F
HOUSING MATERIAL	ABS
LENS	Acrylic
APPROVALS	  General Purpose Yes

4-in-1 Output

The 4-in-1 output offers one normally open and one normally closed output, both of which automatically detect the connected load, so the outputs either source or sink current depending on the load. A single sensor can operate as NPN normally open, NPN normally closed, PNP normally open, or PNP normally closed.

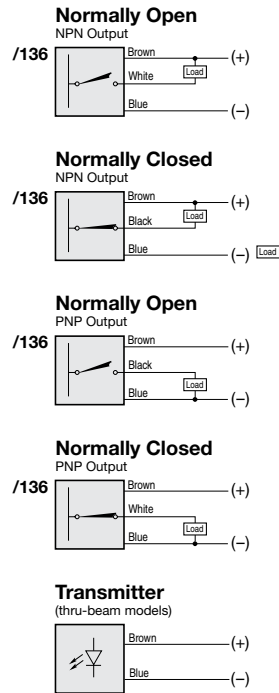


Wiring Diagrams

DC



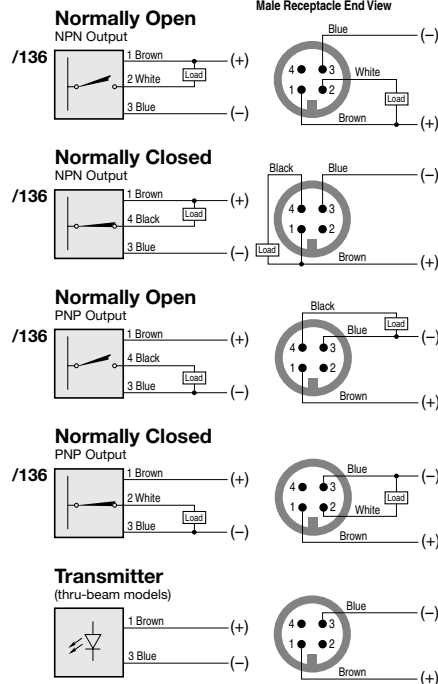
Cable Connection



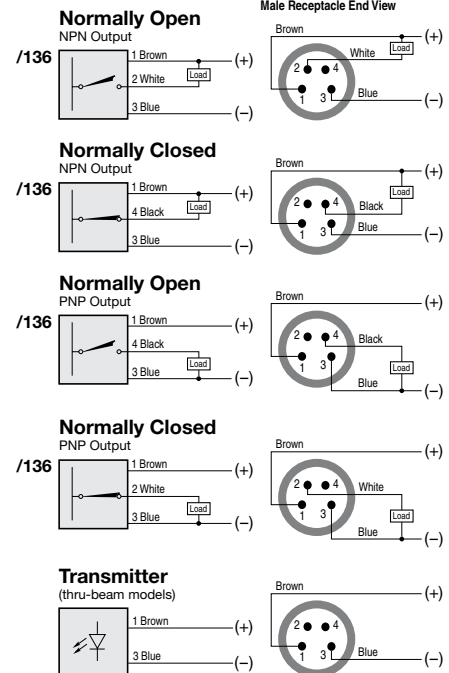
Quick Disconnect

Note: Wiring Diagrams show quick disconnect pin numbers.

V1 Type

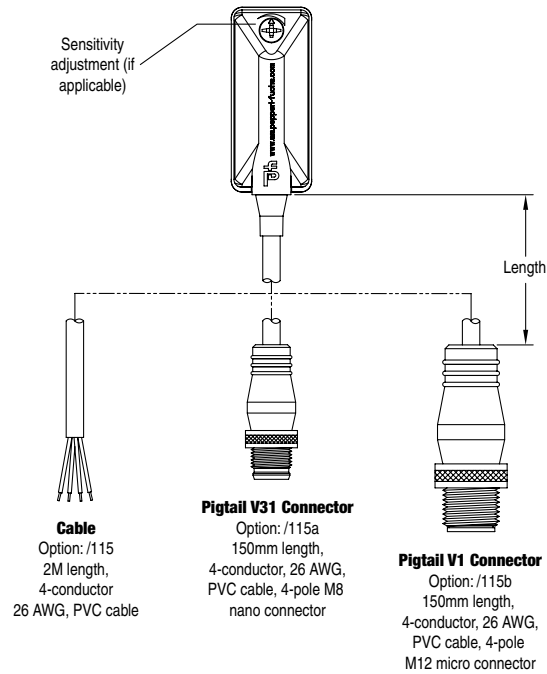
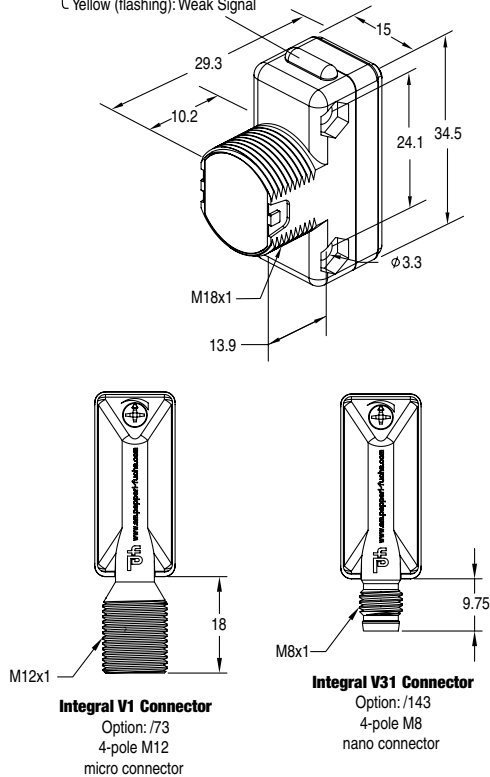


V31 Type



Dimensions (mm)

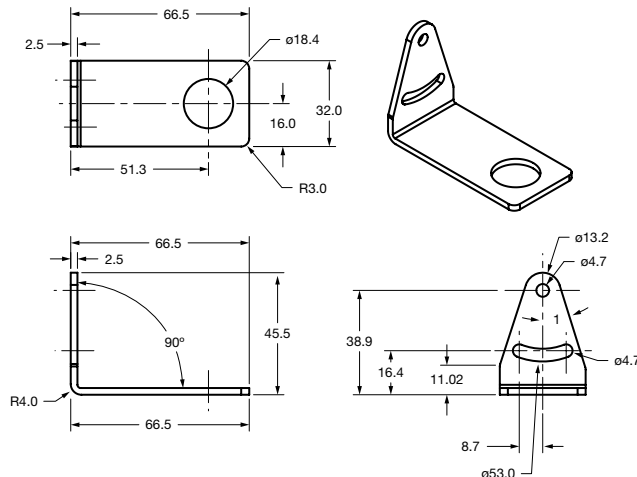
LED(s)
 Green: Power
 Yellow: Output Status
 Green (flashing): Short Circuit/Overload
 Yellow (flashing): Weak Signal
 Not on MD17



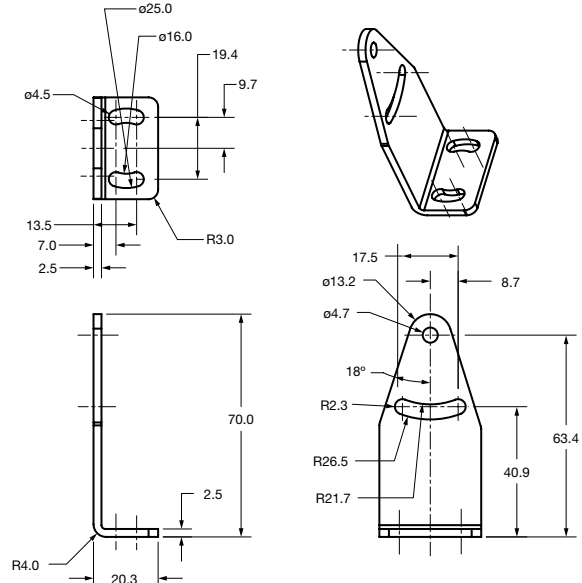
Accessories

(Dimensions in mm)

Snout-mount Mounting Bracket Model OMH-ML17 for ML17 Series sensors



Side-mount Mounting Bracket Model OMH-ML17-1 for ML17 Series sensors

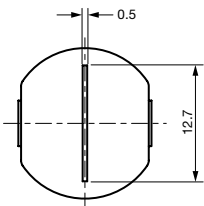


Accessories (cont.)

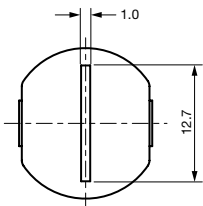
(Dimensions in mm)

Snap-on Stainless Steel Optical Apertures
to reduce excess gain of ML17 Series sensors

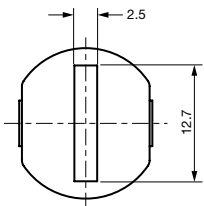
Model No.	Description
ML17-OA-05V	Vertical slotted aperture (0.5mm x 12.7mm), set of 2
ML17-OA-10V	Vertical slotted aperture (1.0mm x 12.7mm), set of 2
ML17-OA-25V	Vertical slotted aperture (2.5mm x 12.7mm), set of 2
ML17-OA-25H	Horizontal slotted aperture (6.4mm x 2.5mm), set of 2
ML17-OA-25D	Round hole aperture (2.5 diameter), set of 2
ML17-OA-KIT	Sample aperture pack, contains 1 each ML17-OA-05V, ML17-OA-10V, ML17-OA-25V, ML17-OA-25H, ML17-OA-25D



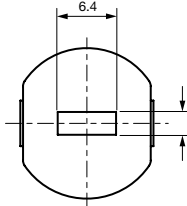
ML17-OA-05V



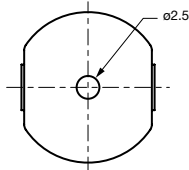
ML17-OA-10V



ML17-OA-25V



ML17-OA-25H



ML17-OA-25D