

Photoelectric Sensors

Photoelectric Series 28 Universal Style



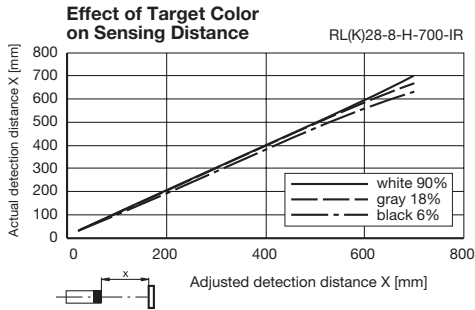
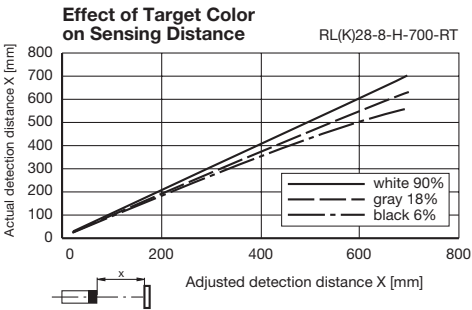
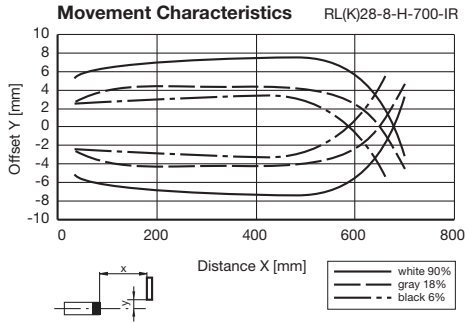
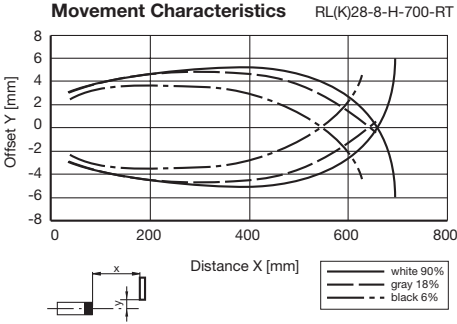
Diffused Mode with Background Suppression

Specifications		20-400mm	20-400mm	20-400mm	20-400mm
SENSING RANGE		20-400mm	20-400mm	20-400mm	20-400mm
SENSITIVITY ADJUSTMENT		Yes	Yes	Yes	Yes
MODEL NUMBER(S)		RL28-8-H-400-RT/49/115 RL28-8-H-400-IR/49/115	RL28-8-H-400-RT/49/105 RL28-8-H-400-IR/49/105	RL28-8-H-400-RT/105/110 RL28-8-H-400-IR/105/110	RLK28-8-H-400-RT-Z/31/116 RLK28-8-H-400-IR-Z/31/116
OUTPUT: /49, /110, or /31		1 NPN and 1 PNP	1 NPN and 1 PNP	1 push-pull	1 SPDT relay
LOAD CURRENT OR ELECTRICAL CONTACT RATING		200mA max.	200mA max.	200mA max.	30VDC/2A 230VAC/2A
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION		Yes	Yes	Yes	—
SUPPLY VOLTAGE		10-30VDC	10-30VDC	10-30VDC	12-240VAC/DC
VOLTAGE RIPPLE		10%	10%	10%	10%
LED(s)		Yes (3)	Yes (3)	Yes (3)	Yes (3)
CURRENT CONSUMPTION		≤40mA	≤40mA	≤40mA	≤3W
OPERATING MODE		Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME		≤2.0ms	≤2.0ms	≤2.0ms	≤20.0ms
TIMER FUNCTION (only on -Z models)		—	—	—	On Delay, Off Delay, One Shot, On Delay+One Shot, On Delay+Off Delay (0.1 to 10 sec.)
SWITCHING FREQUENCY		250Hz	250Hz	250Hz	25Hz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE		NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)		IP67	IP67	IP67	IP67
LIGHT SPOT DIAMETER					
-RT		≈12mm at a range of 400mm	≈12mm at a range of 400mm	≈12mm at a range of 400mm	≈12mm at a range of 400mm
-IR		≈14mm at a range of 400mm	≈14mm at a range of 400mm	≈14mm at a range of 400mm	≈14mm at a range of 400mm
LIGHT BEAM ANGLE					
-RT		1.2° transmitter/2° receiver	1.2° transmitter/2° receiver	1.2° transmitter/2° receiver	1.2° transmitter/2° receiver
-IR		2° transmitter/2° receiver	2° transmitter/2° receiver	2° transmitter/2° receiver	2° transmitter/2° receiver
LIGHT SOURCE					
-RT		Visible red LED	Visible red LED	Visible red LED	Visible red LED
-IR		Infrared LED	Infrared LED	Infrared LED	Infrared LED
AMBIENT LIGHT RESISTANCE		≤50,000 lux	≤50,000 lux	≤50,000 lux	≤50,000 lux
TEMPERATURE RANGE					
WORKING		-40°F to +140°F	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F
STORAGE		-40°F to +167°F	-40°F to +167°F	-40°F to +167°F	-40°F to +167°F
HOUSING MATERIAL		ABS	ABS	ABS	ABS
LENS		Plastic	Plastic	Plastic	Plastic
WEIGHT		2.5oz	2.5oz	2.5oz	3.5oz
APPROVALS					
UL LISTED General Purpose		Yes	Yes	Yes	Yes
CE GENERAL PURPOSE CERTIFIED		Yes	Yes	Yes	Yes
ELECTRICAL CONNECTION		2.5-meter cable, 4-conductor	Quick disconnect type V15	Quick disconnect type V15	Spring-loaded terminal connection



Diffused Mode with Background Suppression

Sensing Characteristics



Photoelectric Sensors

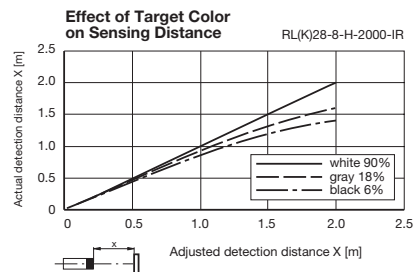
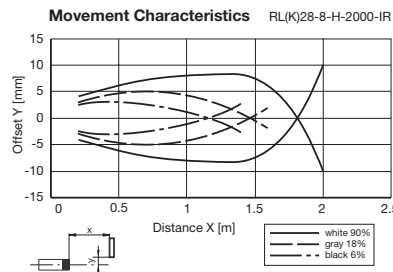
Photoelectric Series 28 Universal Style

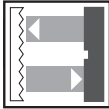


Diffused Mode with Background Suppression









Specifications	20mm-2m	20mm-2m	20mm-2m	20mm-2m
SENSING RANGE	20mm-2m	20mm-2m	20mm-2m	20mm-2m
SENSITIVITY ADJUSTMENT	Yes	Yes	Yes	Yes
MODEL NUMBER(S)	RL28-8-H-2000-IR/49/115	RL28-8-H-2000-IR/49/105	RL28-8-H-2000-IR/105/110	RLK28-8-H-2000-IR-Z/31/116
OUTPUT: /49, /110, or /31	1 NPN and 1 PNP	1 NPN and 1 PNP	1 push-pull	1 SPDT relay
LOAD CURRENT OR ELECTRICAL CONTACT RATING	200mA max.	200mA max.	200mA max.	30VDC/2A 230VAC/2A
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION	Yes	Yes	Yes	—
SUPPLY VOLTAGE	10-30VDC	10-30VDC	10-30VDC	12-240VAC/DC
VOLTAGE RIPPLE	10%	10%	10%	10%
LED(s)	Yes (3)	Yes (3)	Yes (3)	Yes (3)
CURRENT CONSUMPTION	≤40mA	≤40mA	≤40mA	≤3W
OPERATING MODE	Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME	≤2.0ms	≤2.0ms	≤2.0ms	≤20.0ms
TIMER FUNCTION (only on -Z models)	—	—	—	On Delay, Off Delay, One Shot, On Delay+One Shot, On Delay+Off Delay (0.1 to 10 sec.)
SWITCHING FREQUENCY	250Hz	250Hz	250Hz	25Hz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)	IP67	IP67	IP67	IP67
LIGHT SPOT DIAMETER	≈70mm at a range of 2m	≈70mm at a range of 2m	≈70mm at a range of 2m	≈70mm at a range of 2m
LIGHT BEAM ANGLE	2° transmitter/2° receiver	2° transmitter/2° receiver	2° transmitter/2° receiver	2° transmitter/2° receiver
LIGHT SOURCE	Infrared LED	Infrared LED	Infrared LED	Infrared LED
AMBIENT LIGHT RESISTANCE	≤50,000 lux	≤50,000 lux	≤50,000 lux	≤50,000 lux
TEMPERATURE RANGE	<i>WORKING</i> -40°F to +140°F	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F
	<i>STORAGE</i> -40°F to +167°F	-40°F to +167°F	-40°F to +167°F	-40°F to +167°F
HOUSING MATERIAL	ABS	ABS	ABS	ABS
LENS	Plastic	Plastic	Plastic	Plastic
WEIGHT	2.5oz	2.5oz	2.5oz	3.5oz
APPROVALS	General Purpose	Yes	Yes	Yes
	General Purpose	Yes	Yes	Yes
ELECTRICAL CONNECTION	2.5-meter cable, 4-conductor	Quick disconnect type V15	Quick disconnect type V15	Spring-loaded terminal connection

Sensing Characteristics

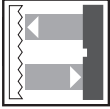




Retro-Reflective Mode

Specifications		0-12m	0-12m	0-12m	0-12m
SENSING RANGE		0-12m	0-12m	0-12m	0-12m
SENSITIVITY ADJUSTMENT		Yes	Yes	Yes	Yes
REFLECTOR DISTANCE		50mm-12m	50mm-12m	50mm-12m	50mm-12m
POLARIZED FILTER		Yes	Yes	Yes	Yes
MODEL NUMBER(S)		RL28-55/49/82b/115	RL28-55/49/82b/105 RL28-55/82b/105/110	RLK28-55/31/116	RLK28-55-Z/31/116
OUTPUT:		1 NPN and 1 PNP	1 NPN and 1 PNP	1 SPDT relay	1 SPDT relay
/49 or /31		1 NPN and 1 PNP	1 NPN and 1 PNP	1 SPDT relay	1 SPDT relay
/110		—	1 push-pull	—	—
LOAD CURRENT OR ELECTRICAL CONTACT RATING		200mA max.	200mA max.	30VDC/2A 230VAC/2A	30VDC/2A 230VAC/2A
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION		Yes	Yes	—	—
SUPPLY VOLTAGE		10-30VDC	10-30VDC	12-240VAC/DC	12-240VAC/DC
VOLTAGE RIPPLE		10%	10%	10%	10%
LED(s)		Yes (3)	Yes (3)	Yes (3)	Yes (3)
CURRENT CONSUMPTION		≤40mA	≤40mA	≤3VA	≤3VA
OPERATING MODE		Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME		≤0.5ms	≤0.5ms	≤20.0ms	≤20.0ms
TIMER FUNCTION (only on -Z models)		—	—	—	On Delay, Off Delay, One Shot (0.1 to 10 sec.)
SWITCHING FREQUENCY		1kHz	1kHz	25Hz	25Hz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE		NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)		IP67	IP67	IP67	IP67
LIGHT SPOT DIAMETER		≈200mm at a range of 12m	≈200mm at a range of 12m	≈200mm at a range of 12m	≈200mm at a range of 12m
LIGHT BEAM ANGLE		1.2° transmitter/2° receiver	1.2° transmitter/2° receiver	1.2° transmitter/2° receiver	1.2° transmitter/2° receiver
LIGHT SOURCE		Visible red LED	Visible red LED	Visible red LED	Visible red LED
AMBIENT LIGHT RESISTANCE		≤80,000 lux	≤80,000 lux	≤80,000 lux	≤80,000 lux
TEMPERATURE RANGE		-40°F to +140°F	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F
WORKING		-40°F to +140°F	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F
STORAGE		-40°F to +167°F	-40°F to +167°F	-40°F to +167°F	-40°F to +167°F
HOUSING MATERIAL		ABS	ABS	ABS	ABS
LENS		Plastic	Plastic	Plastic	Plastic
WEIGHT		2.5oz	2.5oz	3.5oz	3.5oz
APPROVALS		Yes	Yes	Yes	Yes
 General Purpose 		Yes	Yes	Yes	Yes
 General Purpose 		Yes	Yes	Yes	Yes
ELECTRICAL CONNECTION		 2.5-meter cable, 5-conductor	 Quick disconnect type V15	 Spring-loaded terminal connection	 Spring-loaded terminal connection

Photoelectric Sensors

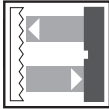


Retro-Reflective Mode



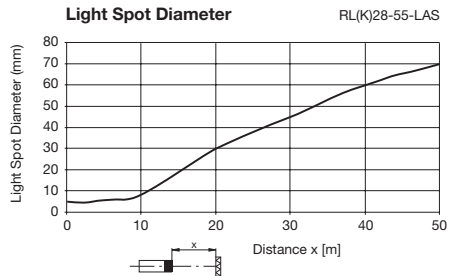
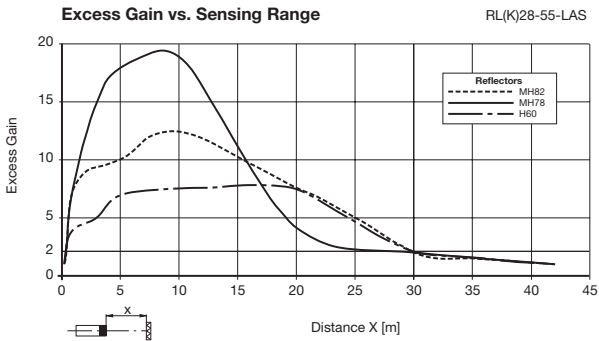
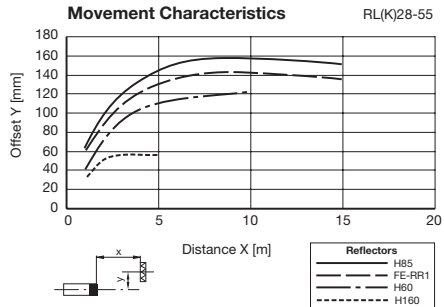
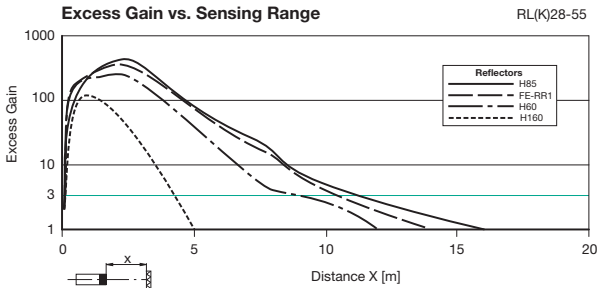
Specifications	Laser*			
	0-30m	0-30m	0-30m	0-30m
SENSING RANGE	0-30m	0-30m	0-30m	0-30m
SENSITIVITY ADJUSTMENT	Yes	Yes	Yes	Yes
REFLECTOR DISTANCE	300mm-30m	300mm-30m	300mm-30m	300mm-30m
POLARIZED FILTER	Yes	Yes	Yes	Yes
MODEL NUMBER(S)	RL28-55-LAS/47/82b/115 RL28-55-LAS/76a/82b/110/115	RL28-55-LAS/47/82b/105 RL28-55-LAS/76a/82b/105/110	RL28-55-LAS-B3B/73c —	RLK28-55-LAS-Z/31/116 —
OUTPUT: /47, -B3B, or /31 /110	2 PNP —	2 PNP 1 push-pull	AS-Interface —	1 SPDT relay —
LOAD CURRENT OR ELECTRICAL CONTACT RATING	200mA max.	200mA max.	—	250VDC/2A 250VAC/2A
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION	Yes	Yes	—	—
SUPPLY VOLTAGE	10-30VDC	10-30VDC	from AS-Interface	12-240VAC/DC
VOLTAGE RIPPLE	≤10%	≤10%	≤10%	—
LED(s)	Yes (2)	Yes (2)	Yes (3)	Yes (2)
CURRENT CONSUMPTION	≤35mA	≤35mA	—	≤3.5VA
OPERATING MODE	Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME	≤0.5ms	≤0.5ms	≤0.5ms	≤20.0ms
TIMER FUNCTION	—	—	One-shot (50ms) through AS-Interface	On Delay, Off Delay, One Shot, On Delay+One Shot, On Delay+Off Delay (0.1 to 10 sec.)
SWITCHING FREQUENCY	1kHz	1kHz	1kHz	25Hz
TRANSMITTER FREQUENCY	≈6-20kHz	≈6-20kHz	≈6-20kHz	≈6-20kHz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)	IP67	IP67	IP67	IP67
LIGHT SPOT DIAMETER	≈45mm at a range of 30m	≈45mm at a range of 30m	≈45mm at a range of 30m	≈45mm at a range of 30m
LIGHT BEAM ANGLE	<0.1° transmitter/<2° receiver	<0.1° transmitter/<2° receiver	<0.1° transmitter/<2° receiver	<0.1° transmitter/<2° receiver
LIGHT SOURCE	Visible red laser 650nm Class 2	Visible red laser 650nm Class 2	Visible red laser 650nm Class 2	Visible red laser 650nm Class 2
AMBIENT LIGHT RESISTANCE	≤50,000 lux	≤50,000 lux	≤50,000 lux	≤50,000 lux
TEMPERATURE RANGE	<i>WORKING</i> +14°F to +122°F <i>STORAGE</i> -4°F to +167°F	+14°F to +122°F -4°F to +167°F	+14°F to +122°F -4°F to +167°F	+14°F to +122°F -4°F to +167°F
HOUSING MATERIAL	ABS	ABS	ABS	ABS
LENS	Plastic	Plastic	Plastic	Plastic
WEIGHT	2.8oz	2.8oz	2.8oz	2.8oz
APPROVALS	General Purpose LISTED General Purpose CERTIFIED	Yes	Yes	Yes
ELECTRICAL CONNECTION	2.5-meter cable, 5-conductor	Quick disconnect type V15	Quick disconnect type V1	Spring-loaded terminal connection

* Micro-structure corner-cube reflectors are recommended with laser retro-reflective mode sensors.



Retro-Reflective Mode

Sensing Characteristics



Photoelectric Series 28 Universal Style

CAUTION

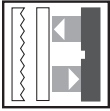
LASER RADIATION —
DO NOT STARE INTO BEAM

650nm LASER LIGHT
1mW PEAK POWER





PRODUCT CONFORMS TO 21CFR1040
CLASS II LASER PRODUCT

◀ AVOID EXPOSURE — Laser radiation
is emitted from this aperture

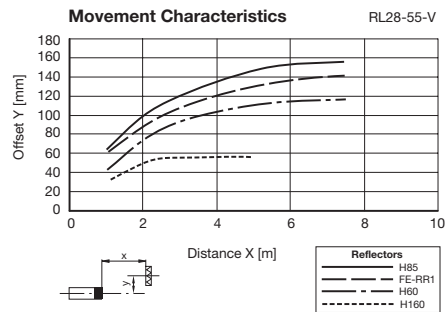
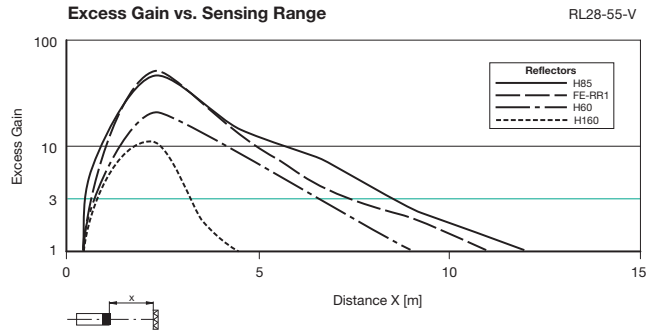
Photoelectric Sensors



Retro-Reflective Mode with Foreground Suppression

Specifications	
SENSING RANGE	200mm-9m
SENSITIVITY ADJUSTMENT	Yes
FOREGROUND SUPPRESSION RANGE	0-200mm
REFLECTOR DISTANCE	500mm-9m
POLARIZED FILTER	Yes
MODEL NUMBER(S)	RL28-55-V/49/82b/105
OUTPUT: Normally Open or Normally Closed	/49 1 NPN and 1 PNP
LOAD CURRENT	200mA max.
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION	Yes
SUPPLY VOLTAGE	10-30VDC
VOLTAGE RIPPLE	10%
LED(s)	Yes (3)
CURRENT CONSUMPTION	≤40mA
OPERATING MODE	Light on/dark on
RESPONSE TIME	≤0.5ms
SWITCHING FREQUENCY	1kHz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE	NEMA ICS5-2000 See page 6
PROTECTION (IEC)	IP67
LIGHT SPOT DIAMETER	≈160mm at a range of 9m
LIGHT BEAM ANGLE	1.2° transmitter/2° receiver
LIGHT SOURCE	Visible red LED
AMBIENT LIGHT RESISTANCE	≤80,000 lux
TEMPERATURE RANGE	<i>WORKING</i> -40°F to +140°F <i>STORAGE</i> -40°F to +167°F
HOUSING MATERIAL	ABS
LENS	Plastic
WEIGHT	2.5oz
APPROVALS	 General Purpose LISTED Yes   General Purpose CERTIFIED Yes
ELECTRICAL CONNECTION	 Quick disconnect type V15

Sensing Characteristics





Thru-Beam Mode

Specifications					
SENSING RANGE		0-30m	0-30m	0-30m	0-30m
SENSITIVITY ADJUSTMENT		Yes	Yes	Yes	Yes
MODEL NUMBER(S)	Transmitter	LD28-F1/76a/105	LD28-F2/76a/105	LD28-F1/76a/116	LD28-F1/76a/116
	Receiver	LV28-F1/47/82b/105	LV28-F2/47/82b/105	LV28-Z-F1/47/82b/116	LV28-Z-F1/49/82b/116
OUTPUT: /47 or /49		2 PNP	2 PNP	2 PNP	1 NPN and 1 PNP
LOAD CURRENT		200mA max.	100mA max.	200mA max.	200mA max.
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION		Yes	Yes	—	—
SUPPLY VOLTAGE		10-30VDC	10-30VDC	10-30VDC	10-30VDC
VOLTAGE RIPPLE		10%	10%	10%	10%
LED(s)		Yes (2) plus alignment LED	Yes (2) plus alignment LED	Yes (2) plus alignment LED	Yes (2) plus alignment LED
CURRENT CONSUMPTION		≤50mA transmitter ≤35mA receiver	≤50mA transmitter ≤35mA receiver	≤50mA transmitter ≤35mA receiver	≤50mA transmitter ≤35mA receiver
OPERATING MODE		Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME		≤0.5ms	≤0.5ms	≤20.0ms	≤20.0ms
TIMER FUNCTION (only on -Z models)		—	—	On Delay, Off Delay, One Shot, On Delay+One Shot, On Delay+Off Delay (.02 to 1 sec.)	On Delay, Off Delay, One Shot, On Delay+One Shot, On Delay+Off Delay (.02 to 1 sec.)
SWITCHING FREQUENCY		1kHz	1kHz	1kHz	1kHz
TRANSMITTER FREQUENCY		F1=25kHz	F2=30kHz	F1=25kHz	F1=25kHz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE		NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)		IP67	IP67	IP67	IP67
LIGHT SPOT DIAMETER		≈600mm at a range of 30m	≈600mm at a range of 30m	≈600mm at a range of 30m	≈600mm at a range of 30m
LIGHT BEAM ANGLE		1.2° transmitter/5° receiver	1.2° transmitter/5° receiver	1.2° transmitter/5° receiver	1.2° transmitter/5° receiver
LIGHT SOURCE		Visible red LED 660nm	Visible red LED 660nm	Visible red LED 660nm	Visible red LED 660nm
AMBIENT LIGHT RESISTANCE		≤50,000 lux	≤50,000 lux	≤50,000 lux	≤50,000 lux
TEMPERATURE RANGE	WORKING	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F	-40°F to +140°F
	STORAGE	-40°F to +167°F	-40°F to +167°F	-40°F to +167°F	-40°F to +167°F
HOUSING MATERIAL		ABS	ABS	ABS	ABS
LENS		Plastic	Plastic	Plastic	Plastic
WEIGHT		2.8oz per housing	2.8oz per housing	4.2oz per housing	4.2oz per housing
APPROVALS	General Purpose LISTED	Yes	Yes	Yes	Yes
	General Purpose CERTIFIED	Yes	Yes	Yes	Yes
ELECTRICAL CONNECTION		Quick disconnect type V15	Quick disconnect type V15	Spring-loaded terminal connection	Spring-loaded terminal connection

Photoelectric Sensors

Photoelectric Series 28 Universal Style



Thru-Beam Mode

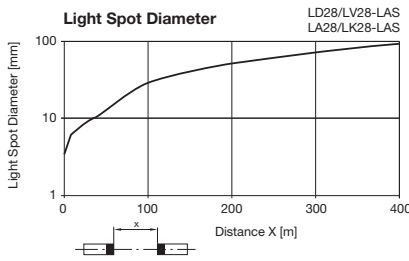
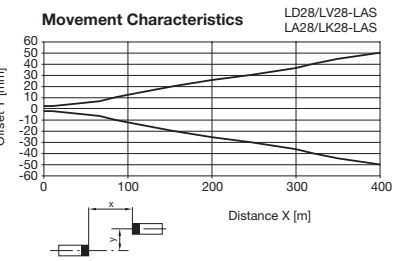
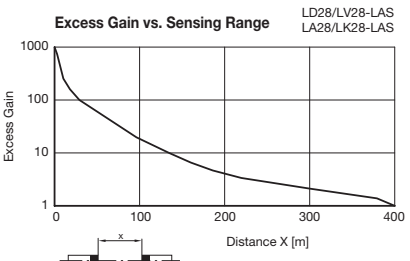
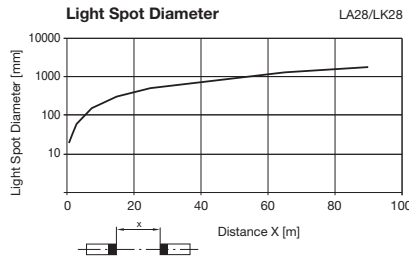
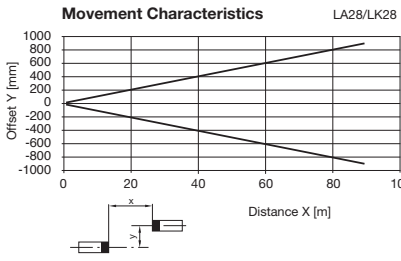
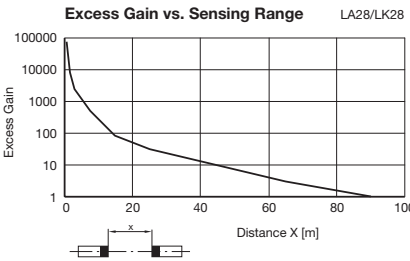
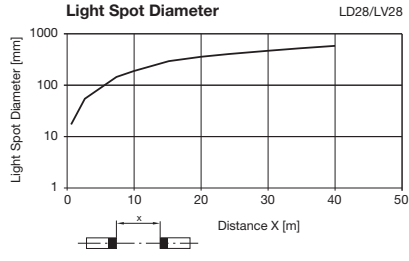
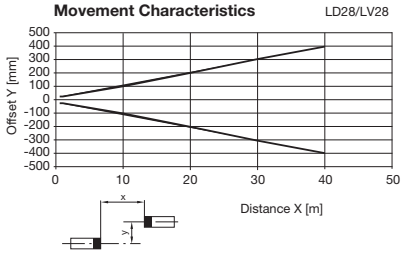
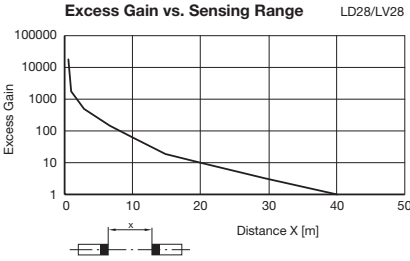


Specifications	Laser			
	0-65m	0-300m	0-300m	0-300m
SENSING RANGE	0-65m	0-300m	0-300m	0-300m
SENSITIVITY ADJUSTMENT	Yes	Yes	Yes	Yes
MODEL NUMBER(S)	Transmitter	LD28-LAS-F1/76a/105	LD28-LAS-F1-B3B/73c	LA28-LAS-F1/116
	Receiver	LK28-Z-F1/31/116	LV28-LAS-F1/47/82b/105	LV28-LAS-F1-B3B/73c
OUTPUT: /31, -B3B, or /47	1 SPDT relay	2 PNP	AS-Interface	1 SPDT relay
LOAD CURRENT OR ELECTRICAL CONTACT RATING	250VDC/2A 250VAC/2A	200mA max.	—	250VDC/2A 250VAC/2A
SHORT CIRCUIT, OVERLOAD, REVERSE POLARITY PROTECTION	—	Yes	—	—
SUPPLY VOLTAGE	12-240VAC/DC	10-30VDC	from AS-Interface	12-240VAC/DC
VOLTAGE RIPPLE	—	10%	—	—
LED(s)	Yes (2) plus alignment LED	Yes (2) plus alignment LED	Yes (3) plus alignment LED	Yes (2) plus alignment LED
CURRENT CONSUMPTION	≤3.5VA	≤55mA transmitter ≤35mA receiver	—	≤3.5VA
OPERATING MODE	Light on/dark on	Light on/dark on	Light on/dark on	Light on/dark on
RESPONSE TIME	≤20ms	≤0.5ms	≤0.5ms	≤20.0ms
TIMER FUNCTION	On Delay, Off Delay, One Shot (0.1 to 10 sec.)	—	One-shot (50ms) through AS-Interface	On Delay, Off Delay, One Shot (0.1 to 10 sec.)
SWITCHING FREQUENCY	25kHz	1kHz	1kHz	25kHz
TRANSMITTER FREQUENCY	F1=25kHz	F1=25kHz	F1=25kHz	F1=25kHz
ELECTROMAGNETIC COMPATIBILITY COMPLIANCE	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6	NEMA ICS5-2000 See page 6
PROTECTION (IEC)	IP67	IP67	IP67	IP67
LIGHT SPOT SIZE	≈1.3m at a range of 65m	≈6mm at a range of 5m, ≈75 x 300mm at a range of 5m (parallel to housing)	≈7 x 4.5mm at a range of 0.1m, ≈6mm at a range of 5m, ≈75 x 300mm at a range of 5m (parallel to housing)	≈6mm at a range of 5m, ≈75 x 300mm at a range of 5m (parallel to housing)
LIGHT BEAM ANGLE	1.2° transmitter/5° receiver	0.06° transmitter/5° receiver	0.06° transmitter/5° receiver	0.06° transmitter/5° receiver
LIGHT SOURCE	Visible red LED 660nm	Visible red laser 650nm Class 2	Visible red laser 650nm Class 2	Visible red laser 650nm Class 2
AMBIENT LIGHT RESISTANCE	≤50,000 lux	≤50,000 lux	≤50,000 lux	≤50,000 lux
TEMPERATURE RANGE	WORKING	+14°F to +122°F	+14°F to +122°F	+14°F to +122°F
	STORAGE	-4°F to +167°F	-4°F to +167°F	-4°F to +167°F
HOUSING MATERIAL	ABS	ABS	ABS	ABS
LENS	Plastic	Plastic	Plastic	Plastic
WEIGHT	4.2oz per housing	2.8oz per housing	2.8oz per housing	4.2oz per housing
APPROVALS	General Purpose LISTED	Yes	Yes	Yes
	General Purpose CERTIFIED	Yes	Yes	Yes
ELECTRICAL CONNECTION	Spring-loaded terminal connection	Quick disconnect type V15	Quick disconnect type V1	Spring-loaded terminal connection



Thru-Beam Mode

Sensing Characteristics



Photoelectric Series 28 Universal Style

CAUTION

LASER RADIATION—
DO NOT STARE INTO BEAM

650nm LASER LIGHT
1mW PEAK POWER

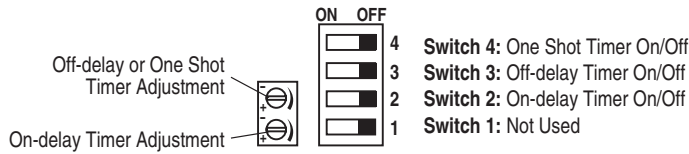
PRODUCT CONFORMS TO 21CFR1040
CLASS II LASER PRODUCT

◀ AVOID EXPOSURE – Laser radiation
is emitted from this aperture

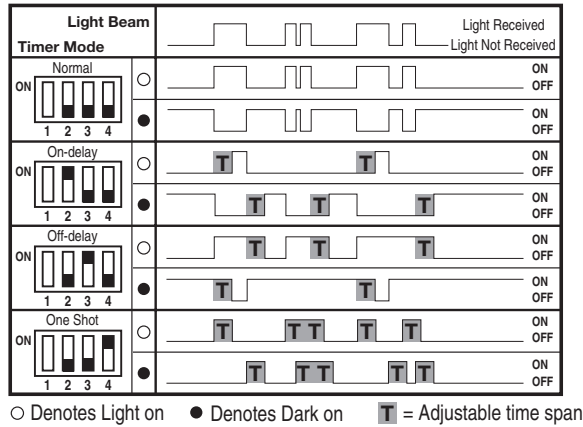
Photoelectric Sensors

Series 28 Programming Information

Note: Timer functions on -Z models only.



TIMING CHART



AS-Interface Programming

Address preset to 00; can be changed via the master or with a hand-held addressing device.
Addresses 1A-31A and 1B-31B are available

IO-Code 3
ID-Code A
ID2 1

Data bits

Bit	Function	Description
D0	switch output	0 = no light received (with P1=1), 0=light received (with P1=0), 1 = no light received (with P1=0), 1=light received (with P1=1)
D1	weak signal output	0 = alarm 1 = no alarm
D2	test input	0 = transmitter active 1 = transmitter deactivated
D3	not used	

Parameter bits

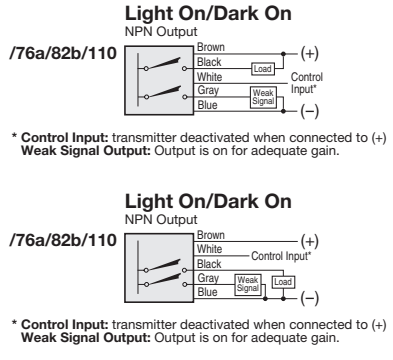
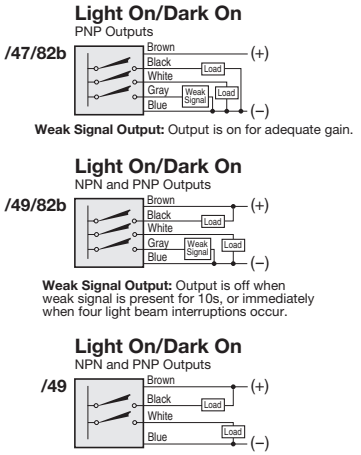
Bit	Function (1/0)	
P0	not used	
P1	light on/dark on mode	(0=dark on, 1=light on)
P2	50ms one shot timer	(0=timer on, 1=timer off)
P3	not used	

Wiring Diagrams

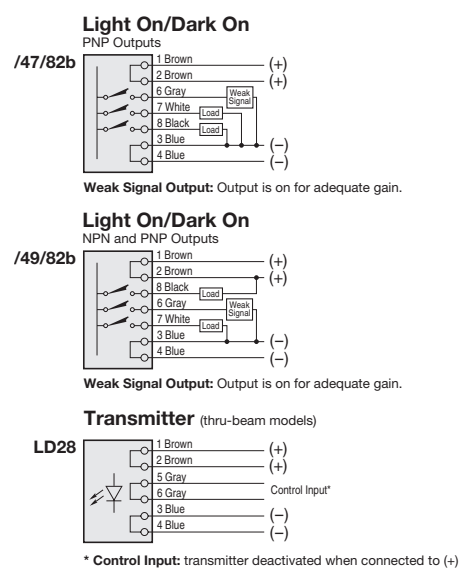
DC



Cable Connection



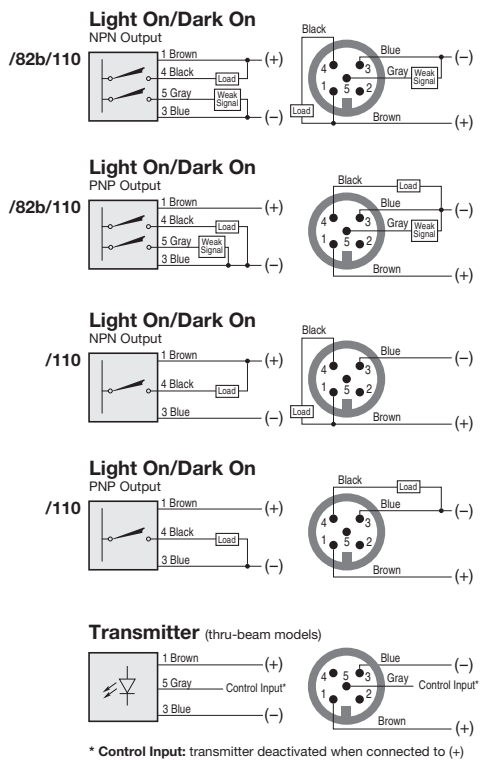
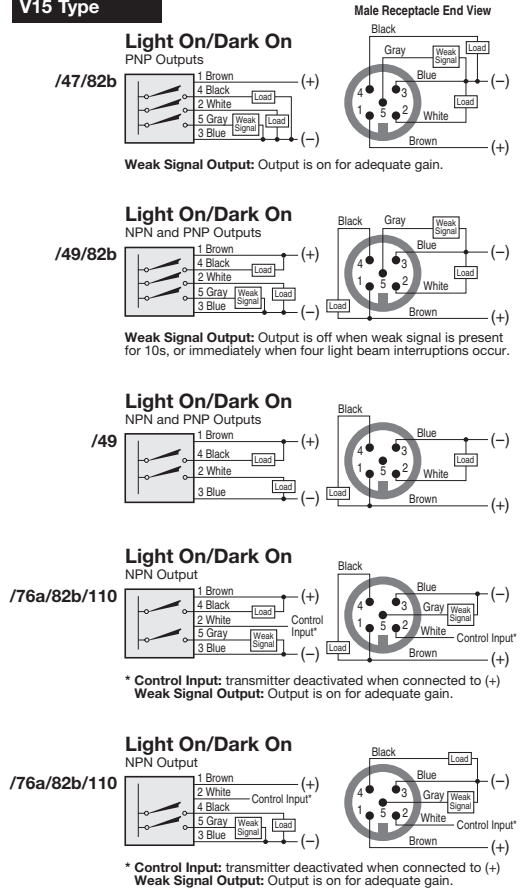
Terminal Connection



Quick Disconnect

Note: Wiring diagrams show quick disconnect pin numbers.

V15 Type



Photoelectric Sensors

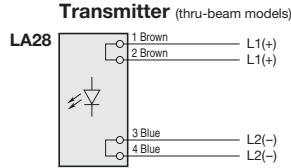
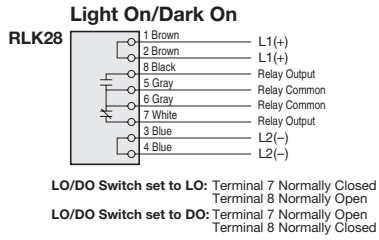
Photoelectric Series 28 Universal Style

Wiring Diagrams

AC/DC



Terminal Connection



AS-Interface



Quick Disconnect

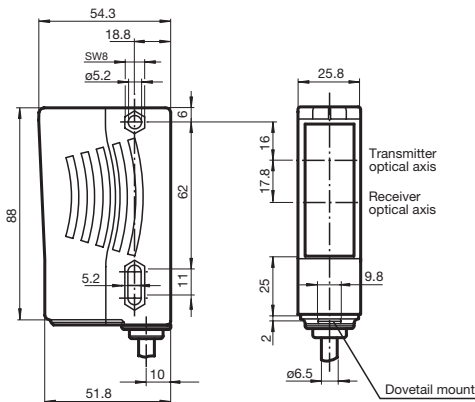
Note: Wiring diagrams show quick disconnect pin numbers.

V1 Type

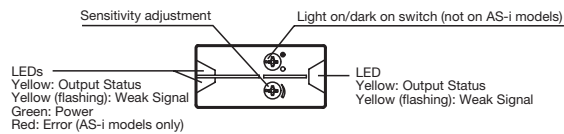
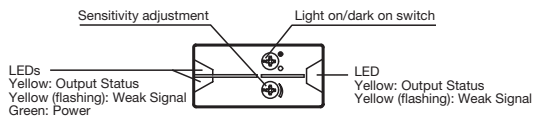
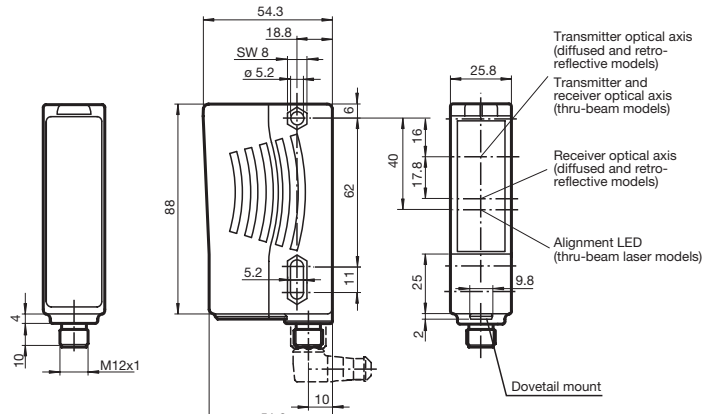


Dimensions (mm)

RL28-.../115

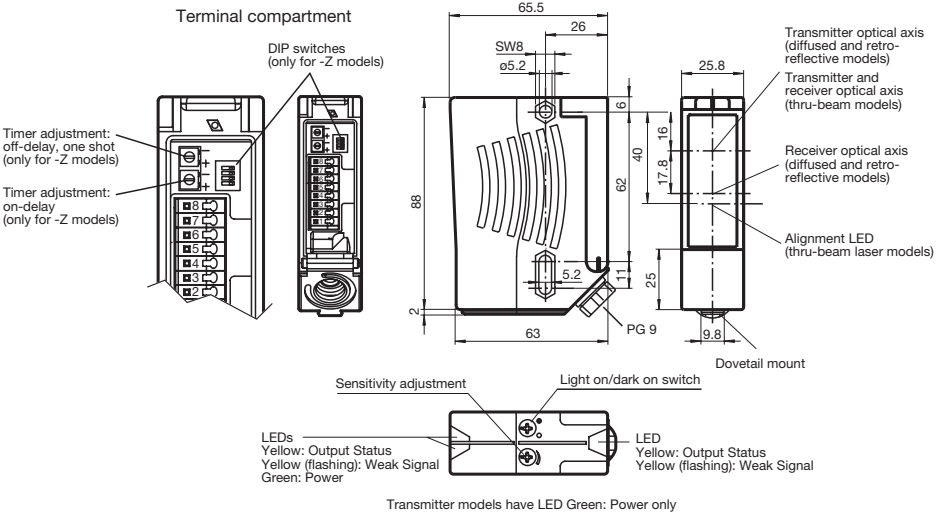


LD28-.../105, LV28-.../105, RL28-.../105, RL28-.../76c



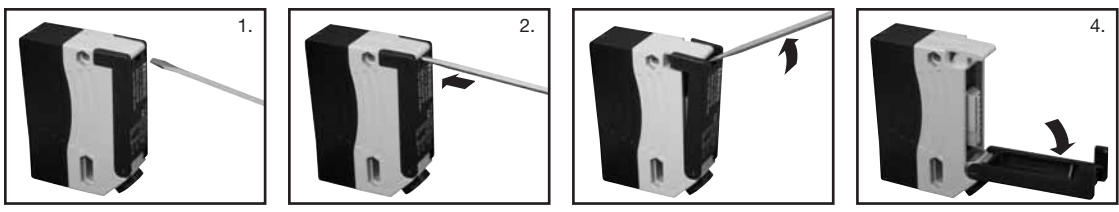
Dimensions (mm)

LA28-.../116, LK28-.../166, RLK28-.../116



Opening the Terminal Compartment (.../116 Models)

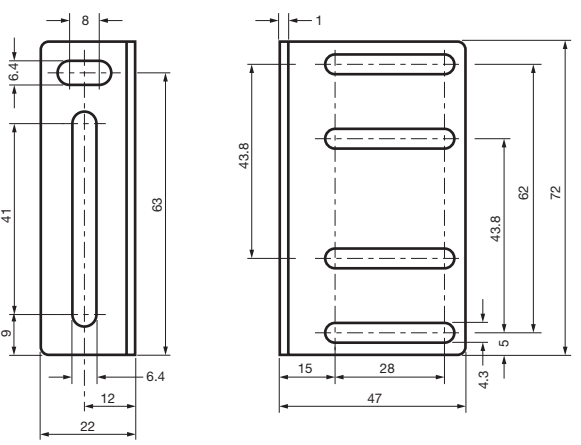
1. A flat-head screwdriver is needed to open the terminal compartment.
 2. Insert the flat-head screwdriver into the center notch under the LED window next to the printed black door with the blade all the way to the back of this notch.
 3. Push the screwdriver upward toward the direction of the LED.
 4. The hinged door with printing will pivot outward, exposing the terminal compartment.
- To close, simply push the hinged door to its original position so that it snaps back into position.



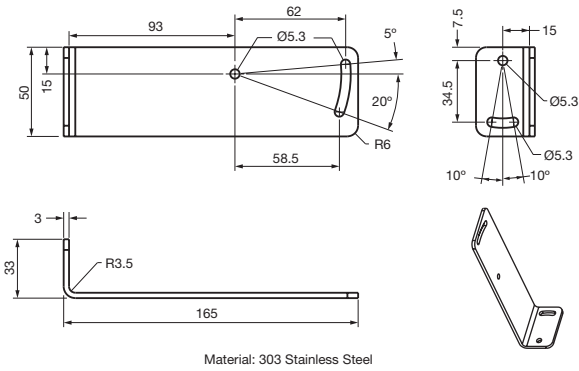
Accessories

(Dimensions in mm)

Mounting Bracket Model OMH-RL25



Mounting Bracket Model OMH-21-T High-profile right angle mounting bracket



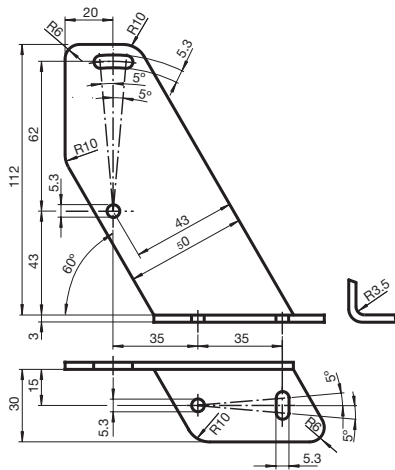
Photoelectric Sensors

Photoelectric Series 28 Universal Style

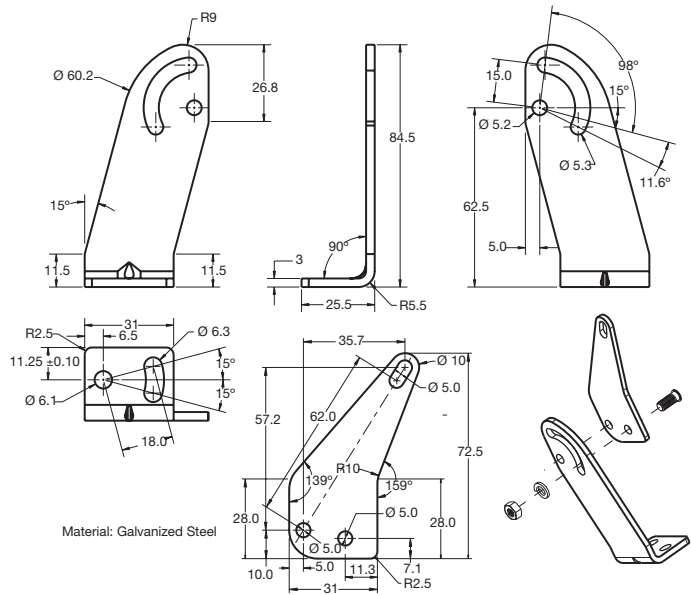
Accessories

(Dimensions in mm)

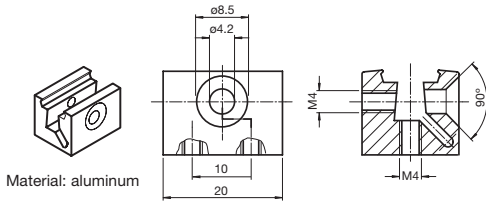
Mounting Bracket Model OMH-21



Mounting Bracket Model OMH-RL2-H Hinged right angle mounting bracket

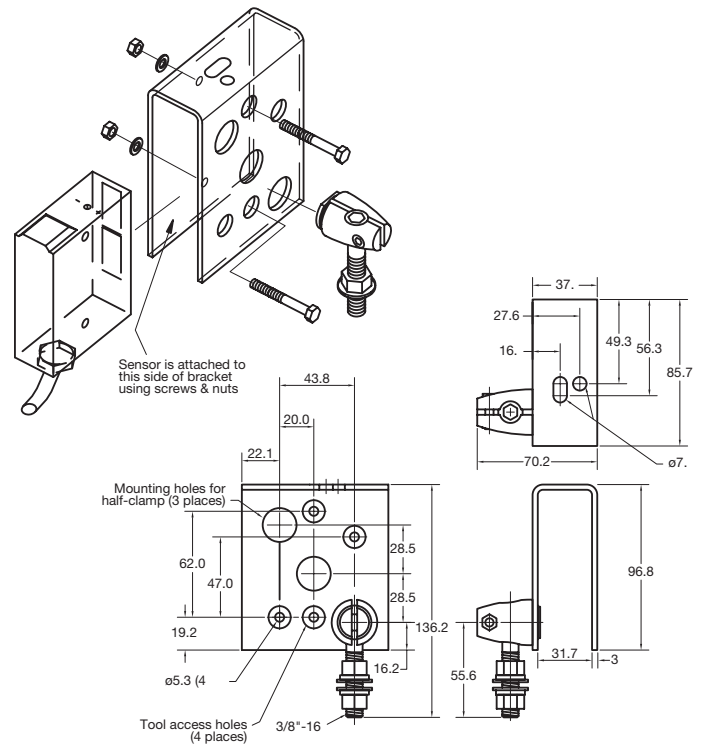


Dovetail Mounting Clamp Model OMH-MLV11-K



Material: aluminum

Mounting Bracket Model OMH-RL2-S Protective shroud bracket with 360° rotatability half-clamp



Material: Stainless steel shroud, nickel-plated zinc half-clamp, zinc-plated steel screws and nuts.

Conduit Adapter Model PG11-1/2"NPT



See pages
767-812 for
cordsets



See pages 825-836
additional accessories
for photoelectric sensors