

Optoelectronic Sensors

BERNSTEIN optoelectronic sensors can be divided into three basic types (operating modes):

- Through-beam sensor **Type T**
- Retro-reflective sensor **Type R**
- Diffuse-reflection sensor **Type D**

In accordance with EN 60947-5-2 the sensors are described as "photoelectric proximity switches" and CE-certified.

The use of the sensor systems depends primarily on the specific application and operating environment.

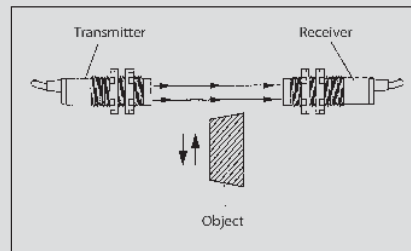
Several applications are outlined on these pages, illustrating the advantages and disadvantages of the individual operating modes.

Dividing all optoelectronic sensors into type groups simplifies device selection. The distinguishing criteria for the type families are the shape and material of the enclosure. The available operating modes of the individual type groups are specified in the Technical Data section of this catalogue.

In general, BERNSTEIN optoelectronic sensors operate using pulsating red or infrared light. This technology offers the following advantages:

- High immunity to ambient light
- Maximum sensing range
- Lower heat built-up and therefore longer service life of transmit diodes

Through-beam sensors



Through-beam sensors consist of an light transmitter (light source) and a spatially separated receiver. The light emitted by the transmitter is analysed by the receiver. An interruption in the light path, e.g. by an object, is evaluated and causes the output to switch.

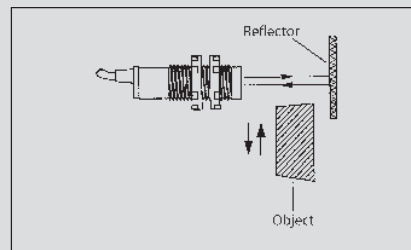
Advantages:

- Long sensing distance; the light beam needs only to travel in one direction from the transmitter to the receiver
- High operational reliability; interference reflections rarely trigger the receiver
- Detection of even the smallest objects by additionally mounting lenses or screens

Disadvantages:

- High installation cost with two devices having to be mounted, wired and adjusted

Retro-reflective sensors



The light transmitter and receiver in retro-reflective sensors are accommodated in one enclosure. The light beam emitted by the transmitter is reflected back to the receiver by a reflector (e.g. triple reflector or reflective film). An interruption in the light paths is evaluated and changes the output signal at the receiver.

The ranges of these types of sensor specified in the Technical Data section in this catalogue relate to an 83 mm diameter triple reflector. Different ranges by using other types or sizes of reflector are available on request.

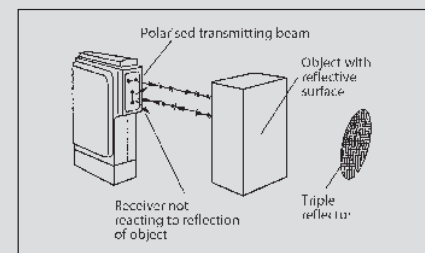
Advantages:

- Easy installation of light barrier and reflector
- The reflector can be used as a moving signal generator, e.g. in conveyor systems

Disadvantages:

- Shorter sensing range than a through-beam system since the light beam has to travel from the transmitter (light source) to the reflector and back to the receiver
- Highly polished objects can act as reflectors and may cause malfunctions

Retro-reflective sensors with polarisation filter



This is a special type of retro-reflective sensor. A special linear or circular polarised filter element (film) is placed between the transmit or receive elements and the glass light emitting face of the sensor.

Advantages:

- Reflections from specular or transparent objects are suppressed

Disadvantages:

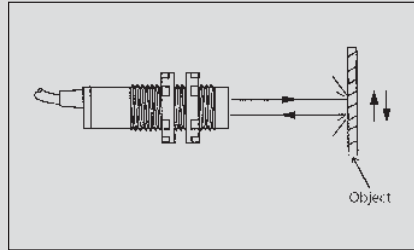
- The sensing range is reduced compared to standard sensors without polarisation filter

Special versions with autocollimation

Advantages:

- Transmit and receive channel use the same light source, i.e. no dead zone with reflectors in short distance range

Diffuse-reflection sensor



The light transmitter and receiver in a diffuse-reflection sensor are accommodated in one common enclosure. The light emitted from the transmitter is reflected diffusely from the detected object. A part of this diffused reflection returns to the receiver and changes the switching status at the output when a certain intensity is exceeded. Accordingly, the texture and the colour of the object surface has a considerable influence on the object detection characteristics (presence – absence).

The sensing ranges specified in the Technical Data section of this catalogue are defined in accordance with DIN EN 60947-5-2: Sensing ranges up to 400 mm refer to a 100 x 100 mm white Kodak paper test card. 200 x 200 mm test cards are used for sensing ranges \geq 400 mm.

The reflectivity of the object surface to be sensed affects the sensing distance so that a correction or remission factor has to be specified. This value may vary from less than 10 % for matt-black plastic to 200 % for raw sheet aluminium (special values on request).

An application-dependent test of the specific object is usually recommended to take ambient conditions such as dust and humidity into consideration for the selection of the optimum sensor.

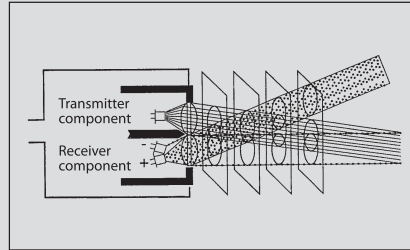
Advantages:

- Easy installation
- No reflector necessary

Disadvantages:

- Different sensing distances and sensitivity settings are required for different objects (surface, colour)

Diffuse-reflection sensor with background suppression



This is a special type of diffuse-reflection sensor. It is based on two receive modules or segmented receivers. Using the triangulation principle, reflections of objects beyond the target do not reach the active face of the receiver modules.

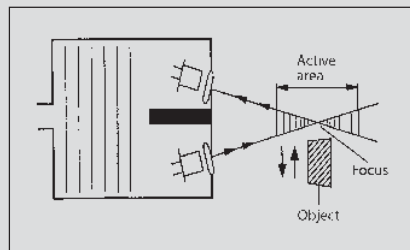
Advantages:

- No background effect on object detection (e.g. a faintly reflecting object may be detected in front of a high-gloss background)

Disadvantages:

- Short sensing distance
- Considerable technical expenditure

Convergent beam sensors, fixed focus



Convergent beam sensors, fixed focus
The transmit and receive modules of convergent beam sensors are arranged at a defined angle to each other. The light cone of the transmitter and receiver are joined at a fixed focal point. This results in the active zone for the detection of objects being defined around this focal point.

Advantages:

- Foreground / background suppression
- Defined active zone

Disadvantages:

- Short sensing distances (due to limited base width of sensor enclosure)

Angular optical system

The M18 series is available with a radial optical system (light outlet offset by 90°) for confined installation conditions. Compared to versions with an axial optical system, the sensing range of these sensors is slightly reduced due to optical displacement loss.

Reflectors

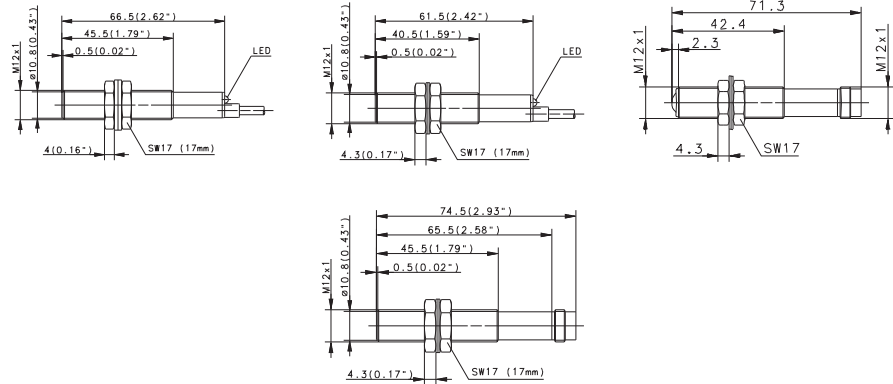
BERNSTEIN triple reflectors that consist of several triple mirrors arranged in a pyramid configuration are best suited for reflecting light in light barrier systems. The pyramid-like structure of these triple mirrors allows the reflector to be pivoted by up to 30° from the optical axis (e.g. caused by vibration or slight movement).

The specified sensing ranges of the retro-reflective sensors refer to the \varnothing 83 mm reflector (6572107003); the range is reduced accordingly with smaller reflectors.

Essentially, the size of the reflector should be selected according to the sensing range and the size of the object to be detected. The object should ideally be larger than the reflector so that it completely covers the reflector.

Optoelectronic Sensors (Type M12, M18)

Type	M12	M12	M12
Operating mode	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D
Sensing range	60 mm	60 mm	60 mm
Type of connection	Cable 2 m	Cable 2 m	Connector M12
Special feature			Through-beam sensor Type T
			6 m
			Connector M12



PNP	Light activated Type Dark activated Programmable Type	6557928002 OM12RT-DHTP-0060-CL	6557930002 OT12RT-DHTP-0060-CL	6557929002 OT12RT-DHTP-0060-S		
NPN	Light activated Dark activated Programmable					
Transmitter	Type				6551029001 OT12SE-DOOS-06.0-S	
Relay output						
NAMUR						
Analogue	Current output Voltage output					
2-wire	DC AC					

Technical data

Rated operating voltage	U_b	10–36 VDC	10–36 VDC	10–36 VDC	10–36 VDC
Rated operating current	I_b	50 mA	50 mA	50 mA	50 mA
Switching frequency (max)	F	> 100 Hz	> 100 Hz	> 100 Hz	> 100 Hz
Short circuit-protection		Cyclic	Cyclic	Cyclic	Cyclic
Function/operating voltage indicator		LED/-	LED/-	-/-	-/-
Sensitivity adjustable		-	-	-	-
Teachable					
Timer function					
Diagnostic function					
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

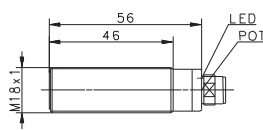
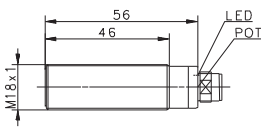
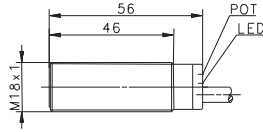
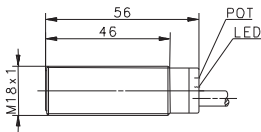
Mechanical data

Ambient temperature (min/max)		-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP67	IP67	IP67	IP67
Enclosure material		CuZn39Pb3	PA	PA	PA, red
Connection		3 x 0.14 mm ²	3 x 0.14 mm ²	M12 x 1	M12 x 1

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.



M18		M18			
Diffuse-reflection sensor Type D 40 mm Cable 2 m	Diffuse-reflection sensor Type D 40 mm Connector M12	Diffuse-reflection sensor Type D 100 mm Cable 2 m	Diffuse-reflection sensor Type D 100 mm Connector M12		



6558819001 OT18FF-DPTP-0040-CL	6558818002 OT18FF-DPTP-0040-SL	6557819004 OT18RT-DPTP-0100-CL	6557818002 OT18RT-DPTP-0100-SL				

10-36 VDC	10-36 VDC	10-36 VDC	10-36 VDC		
50 mA	50 mA	200 mA	200 mA		
500 Hz	500 Hz	500 Hz	500 Hz		
Cyclic	Cyclic	Cyclic	Cyclic		
LED/-	LED/-	LED/-	LED/-		
-	-	-	-		
IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm		

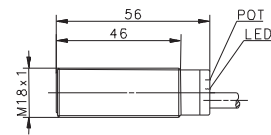
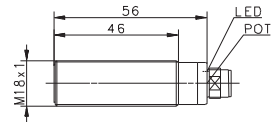
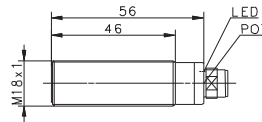
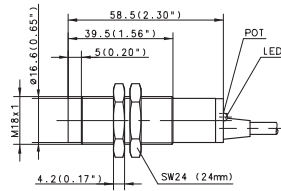
-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C		
IP67	IP67	IP67	IP67		
PBT	PBT	PBT	PBT, black		
4 x 0.34 mm ²	M12 x 1	4 x 0.34 mm ²	M12 x 1		

You will find detailed data sheets to the products under www.bernstein.eu



Optoelectronic Sensors (Type M18)

Type	M18	M18	M18
Operating mode	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D
Sensing range	200 mm	300 mm	300 mm
Type of connection	Cable 2 m	Connector M12	Connector M12
Special feature			Diffuse-reflection sensor Type D 300 mm Cable 2 m



PNP	Light activated Dark activated Programmable Type	6557819001 OT18RT-DATP-0200-CEL	6557821002 ON18RT-DPTP-0300-SLE	6557816002 OM18RT-DPTP-0300-SLE	6557819005 OT18RT-DPTP-0300-CLE
NPN	Light activated Dark activated Programmable Type	6557219002 OT18RT-DATN-0200-CEL			
Transmitter	Type				
Relay output					
NAMUR					
Analogue	Current output Voltage output				
2-wire	DC AC				

Technical data

Rated operating voltage	U_b	10–36 VDC	10–36 VDC	10–36 VDC	10–36 VDC
Rated operating current	I_b	200 mA	200 mA	200 mA	200 mA
Switching frequency (max)	F	> 250 Hz	500 Hz	500 Hz	500 Hz
Short circuit-protection		Cyclic	Cyclic	Cyclic	Cyclic
Function/operating voltage indicator		LED/–	LED/–	LED/–	LED/–
Sensitivity adjustable		Yes	Yes	Yes	Yes
Teachable					
Timer function					
Diagnostic function					
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

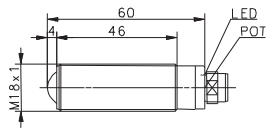
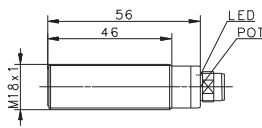
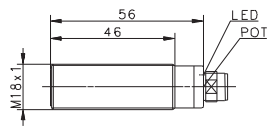
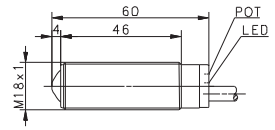
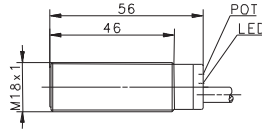
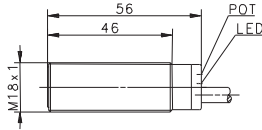
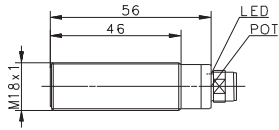
Mechanical data

Ambient temperature (min/max)		–20°C/+80°C	–20°C/+70°C	–20°C/+70°C	–20°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP65	IP67	IP67	IP67
Enclosure material		PA, red	Stainless steel 1.4305	CuZn39Pb3	PBT
Connection		4 x 0.25 mm ²	M12 x 1	M12 x 1	4 x 0.34 mm ²

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.



M18	M18		M18		M18	
Diffuse-reflection sensor Type D 300 mm Connector M12	Diffuse-reflection sensor Type D 500 mm Cable 2 m	Diffuse-reflection sensor Type D 500 mm Connector M12	Diffuse-reflection sensor Type D 500 mm Cable 2 m	Diffuse-reflection sensor Type D 500 mm Connector M12	Retro-reflective sensor Type R 2.5 m Cable 2 m Glass lens	Retro-reflective sensor Type R 2.5 m Connector M12 Glass lens



6557818003 OT18RT-DPTP-0300-SLE	6557817004 OM18RT-DPTP-0500-CLE	6557816006 OM18RT-DPTP-0500-SLE	6557819006 OT18RT-DPTP-0500-CLE	6557818006 OT18RT-DPTP-0500-SLE	6555819003 OT18PS-DPTP-02.5-CLE	6555818001 OT18PS-DPTP-02.5-SLE
6557218005 OT18RT-DPTN-0300-SLE	6557217003 OM18RT-DPTN-0500-CLE					

10-36 VDC	10-36 VDC	10-36 VDC	10-36 VDC	10-36 VDC	10-36 VDC	10-36 VDC
200 mA	200 mA	200 mA	200 mA	200 mA	200 mA	200 mA
500 Hz	500 Hz	500 Hz	500 Hz	500 Hz	500 Hz	500 Hz
Cyclic	Cyclic	Cyclic	Cyclic	Cyclic	Cyclic	Cyclic
LED/-	LED/-	LED/-	LED/-	LED/-	LED/-	LED/-
Yes	Yes	Yes	Yes	Yes	Yes	Yes
IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm	red 660 nm	red 660 nm

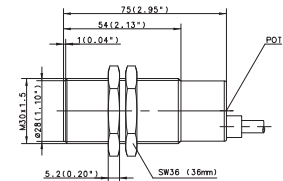
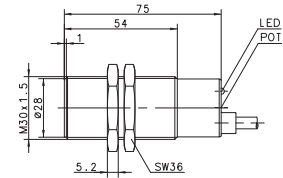
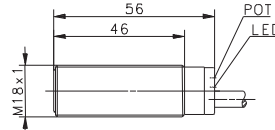
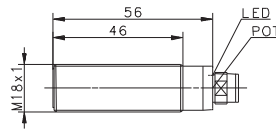
-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C
IP67	IP67	IP67	IP67	IP67	IP67	IP67
PBT	CuZn39Pb3	CuZn39Pb3	PBT	PBT	PBT, black	PBT, black
M12 x 1	4 x 0.34 mm ²	M12 x 1	4 x 0.34 mm ²	M12 x 1	4 x 0.34 mm ²	M12 x 1

You will find detailed data sheets to the products under www.bernstein.eu



Optoelectronic Sensors (Type M18, M30)

Type	M18	M18	M30
Operating mode	Through-beam sensor Type T	Through-beam sensor Type T	Diffuse-reflection sensor Type D Diffuse-reflection sensor Type D
Sensing range	8 m	8 m	200 mm 500 mm
Type of connection	Connector M12	Cable 2 m	Cable 6 m Cable 2 m
Special feature			



PNP	Light activated Type Dark activated Type Programmable Type	6551821001 ON18EE-DPTP-08.0-SL	6551819001 OT18EE-DPTP-08.0-CL	6557905008 OT30RT-DHTP-0200-6LE	6557005006 OT30RT-DDAP-0500-CE
NPN	Light activated Dark activated Programmable				
Transmitter	Type	6551021001 ON18SE-DOOS-08.0-SCV	6551019001 OT18SE-DOOS-08.0-CCV		
Relay output					
NAMUR					
Analogue	Current output Voltage output				
2-wire	DC AC				

Technical data

Rated operating voltage	U_b	10–36 VDC	10–36 VDC	10–36 VDC	10–30 VDC
Rated operating current	I_b	200 mA	200 mA	200 mA	–
Switching frequency (max)	F	500 Hz	500 Hz	> 250 Hz	–
Short circuit-protection		Cyclic	Cyclic	Yes	Yes
Function/operating voltage indicator		LED/–	LED/–	LED/–	–/–
Sensitivity adjustable		–	–	Yes	Yes
Teachable					
Timer function					
Diagnostic function					
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

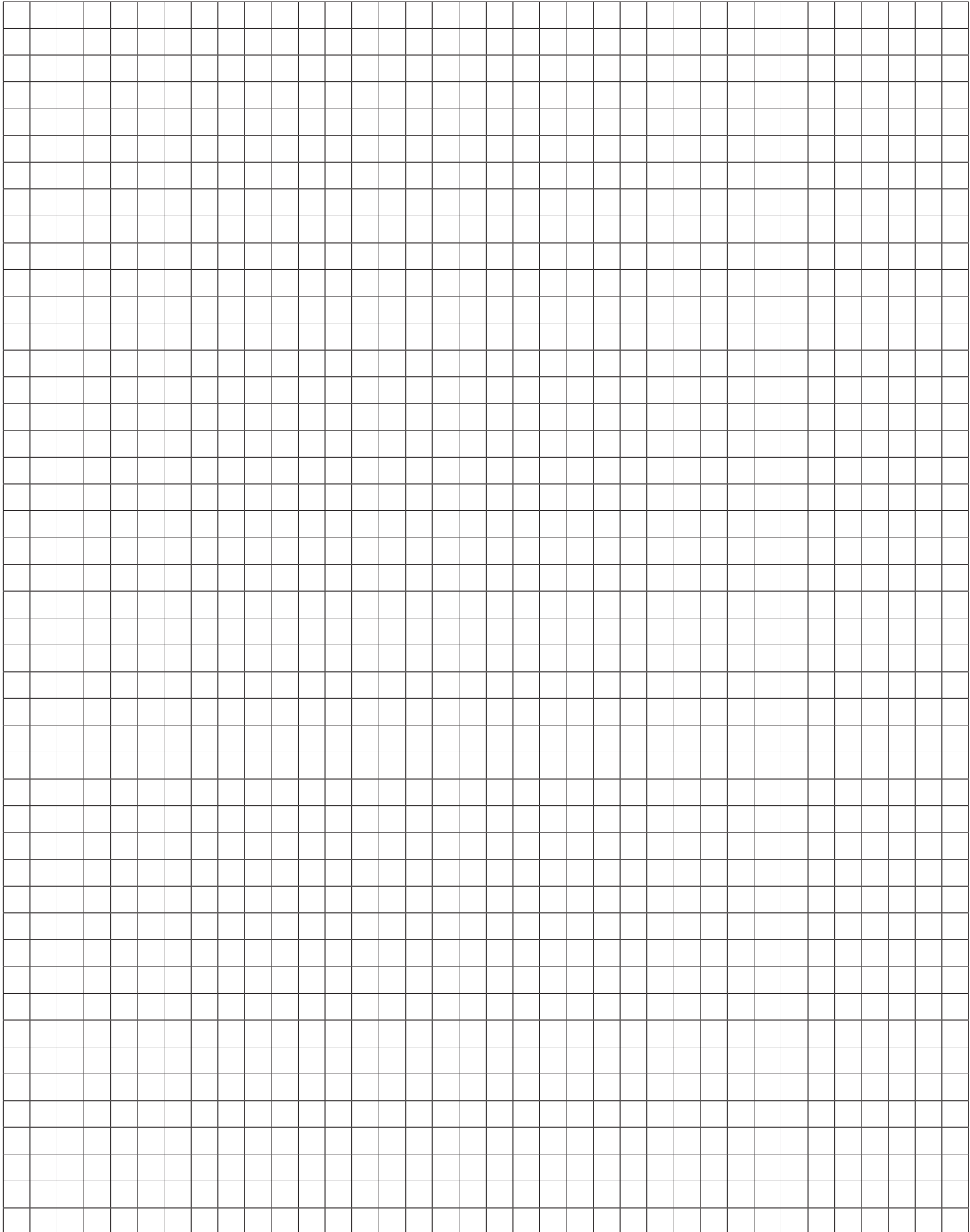
Mechanical data

Ambient temperature (min/max)		–20°C/+70°C	–20°C/+70°C	–20°C/+80°C	–20°C/+80°C
Protection class in accordance with IEC 529, EN 60529		IP67	IP67	IP65	IP65
Enclosure material		Stainless steel 1.4305	PBT, black	PA	PA
Connection		M12 x 1	4 x 0.34 mm ²	3 x 0.5 mm ²	3 x 0.5 mm ²

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.

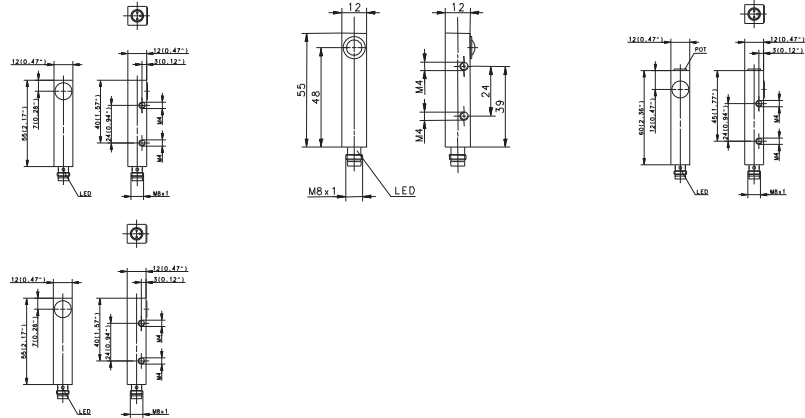


Notes



Optoelectronic Sensors (Type 12 x 12 mm, 30 x 30 mm)

Type	12 x 12 x 55 mm		12 x 12 x 55 mm	12 x 12 x 60 mm
Operating mode	Through-beam sensor Type T	Through-beam sensor Type T	Through-beam sensor Type T	Diffuse-reflection sensor Type D
Sensing range	1 m	1 m	6 m	200 mm
Type of connection	Connector M8	Connector M8	Connector M8	Connector M8
Special feature	Core beam			



PNP	Light activated Type	6551955002 OR12EE-DHTP-01.0-SL	6551955001 OR12EE-DHTP-06.0-SL	6557955001 OR12RT-DHTP-0200-SLE
	Dark activated Type	6551755002 OR12EE-DDTP-01.0-SL	6551755001 OR12EE-DDTP-06.0-SL	
NPN	Light activated Type	6551755004 OR12EE-DDTP-01.0-SLE	6551355001 OR12EE-DHTN-06.0-SL	
	Dark activated Type			
Transmitter	Type	6551055003 OR12SE-DOOS-01.0-SVC	6551055002 OR12SE-DOOS-06.0-SVC	
	Relay output			
NAMUR				
Analogue	Current output			
	Voltage output			
2-wire	DC			
	AC			

Technical data

Rated operating voltage	U_B	10–36 VDC	10–36 VDC	10–36 VDC	10–36 VDC
Rated operating current	I_B	200 mA	200 mA	200 mA	200 mA
Switching frequency (max)	F	100 Hz	100 Hz	100 Hz	100 Hz
Short circuit-protection		Cyclic	Cyclic	Cyclic	Cyclic
Function/operating voltage indicator		LED/-	LED/-	LED/-	LED/-
Sensitivity adjustable		-	Yes	-	Yes
Teachable					
Timer function					
Diagnostic function		Yes		Yes	
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

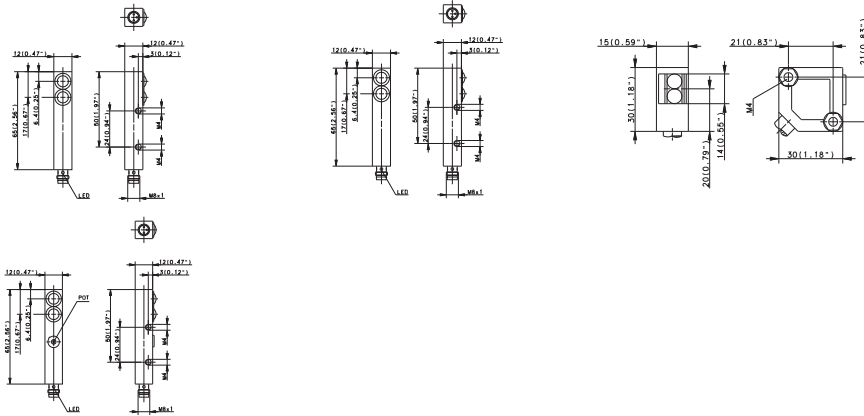
Mechanical data

Ambient temperature (min/max)		-5°C/+70°C	-5°C/+70°C	-5°C/+70°C	-5°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP65	IP65	IP65	IP65
Enclosure material		CuZn39Pb3	CuZn39Pb3	CuZn39Pb3	CuZn39Pb3
Connection		M8 x 1	M8 x 1	M8 x 1	M8 x 1

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.



12 x 12 x 65 mm		12 x 12 x 65 mm	30 x 30 x 15 mm
Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D	Retro-reflective sensor Type R	Diffuse-reflection sensor Type D
50 mm	1.2 m	4 m	1.2 m
Connector M8	Connector M8	Connector M8	Cable 3 m
Fixed focus/...			Antivalent [Ⓜ]



6558955001 OR12FF-DHTP-0050-SL	6557955002 OR12RT-DHTP-01.2-SLE	6554955001 OR12RS-DHTP-04.0-SL 6554755001 OR12RS-DDTP-04.0-SL		6557875003 [Ⓜ] OR05RT-DATP-01.2-3DE			

10–36 VDC	10–36 VDC	10–36 VDC	10–36 VDC
200 mA	200 mA	200 mA	200 mA
100 Hz	100 Hz	100 Hz	< 1 kHz
Cyclic	Cyclic	Cyclic	Yes
LED/-	LED/-	LED/-	LED/LED
-	Yes	-	Yes
IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

-5°C/+70°C	-5°C/+70°C	-5°C/+70°C	-25°C/+70°C
IP65	IP65	IP65	IP67
CuZn39Pb3	CuZn39Pb3	CuZn39Pb3	PBTB
M8 x 1	M8 x 1	M8 x 1	4 x 0.14 mm ²

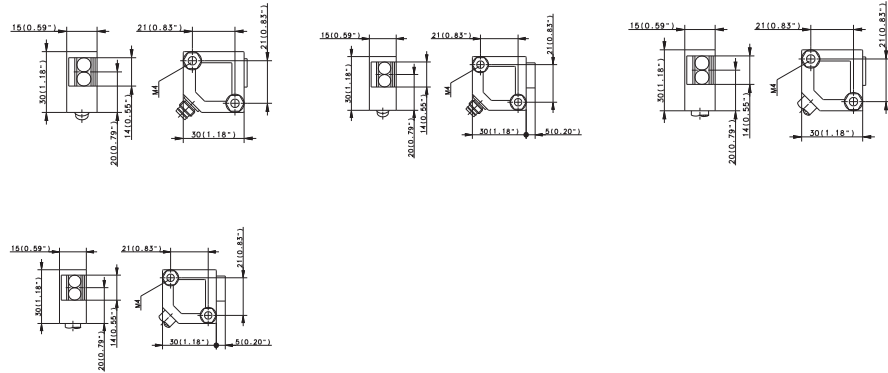
You will find detailed data sheets to the products under www.bernstein.eu

[Ⓜ] Antivalent output



Optoelectronic Sensors (Type 30 x 30 mm, 40 x 26 mm)

Type	30 x 30 x 15 mm	30 x 30 x 15 mm	30 x 30 x 15 mm
Operating mode	Diffuse-reflection sensor Type D	Retro-reflective sensor Type R	Through-beam sensor Type T
Sensing range	1.2 m	4 m	12 m
Type of connection	Connector M8/Ø 8	Cable 2 m	Cable 3 m
Special feature		polarised	



PNP	Light activated Type Dark activated Programmable Type	6557975003 OR05RT-DHTP-01.2-SLFE	6555975002 OR05PS-DHTP-04.0-3LFE	6555875001 ® OR05PS-DATP-04.0-3DE	6551875003 ® OR05EE-DATP-12.0-3DE
NPN	Light activated Dark activated Programmable				
Transmitter	Type				6551075003 OR05SE-DOOS-12.0-3C
Relay output					
NAMUR					
Analogue	Current output Voltage output				
2-wire	DC AC				

Technical data

Rated operating voltage	U _B	10–36 VDC	10–36 VDC	10–36 VDC	10–36 VDC
Rated operating current	I _B	200 mA	200 mA	200 mA	–
Switching frequency (max)	F	< 1000 Hz	< 1 kHz	< 1 kHz	–
Short circuit-protection		Yes	Yes	Yes	–
Function/operating voltage indicator		LED/LED	LED/LED	LED/LED	LED/LED
Sensitivity adjustable		Yes	Yes	Yes	Yes
Teachable					
Timer function					
Diagnostic function					
Type of light		IR 880 nm	red 660 nm	red 660 nm	IR 880 nm

Mechanical data

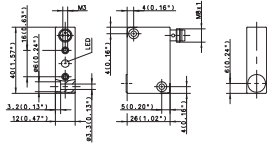
Ambient temperature (min/max)		–25°C/+70°C	–25°C/+70°C	–25°C/+70°C	–25°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP67	IP67	IP67	IP67
Enclosure material		PBTB	PBTB	PBTB	PBTB
Connection		4-pin	4 x 0.14 mm ²	4 x 0.14 mm ²	4 x 0.14 mm ²

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.

® Antivalent output



40 x 26 x 12 mm Diffuse-reflection sensor Type D 40 mm Connector M8			
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6557950006 OR15RT-DHTP-0040-SL							

10-36 VDC			
200 mA			
> 100 Hz			
Cyclic			
LED/-			
-			
IR 880 nm			

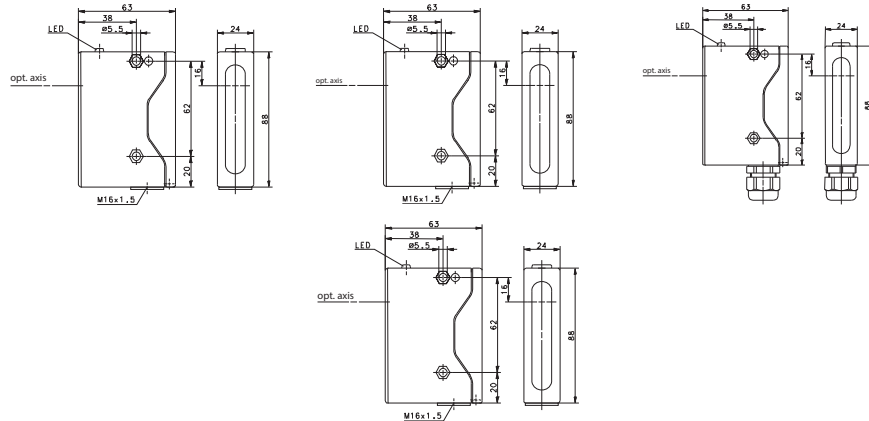
-5°C/+70°C			
IP65			
PA			
M8 x 1			

You will find detailed data sheets to the products under www.bernstein.eu



Optoelectronic Sensors (Type 88 x 63 mm)

Type	88 x 63 x 24 mm	88 x 63 x 24 mm	88 x 63 x 24 mm
Operating mode	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D	Diffuse-reflection sensor Type D
Sensing range	400 mm	600 mm	1.5 m
Type of connection	Connect. space	Connect. space	Connect. space
Special feature	①		



PNP	Light activated Type Dark activated Programmable Type		6557886003 OR20RT-DTP-01.5-ALET	
NPN	Light activated Dark activated Programmable			
Transmitter				
Relay output	Type	6558686002 OR20RH-MAR5-0400-ALET	6557686001 OR20RT-MAR5-0600-ALET	6557686004 OR20RT-MAR5-01.5-ALET
NAMUR				
Analogue	Current output Voltage output			
2-wire	DC AC			

Technical data

Rated operating voltage	U_b	12–265V AC/DC	12–265V AC/DC	10–36 VDC	12–265V AC/DC
Rated operating current	I_b	3 A	3 A	200 mA	3 A
Switching frequency (max)	F	> 50 Hz	> 50 Hz	> 100 Hz	> 50 Hz
Short circuit-protection		SCPD external	SCPD external	Cyclic	SCPD external
Function/operating voltage indicator		LED/-	LED/-	LED/-	LED/-
Sensitivity adjustable		Yes	Yes	Yes	Yes
Teachable					
Timer function		Yes	Yes	Yes	Yes
Diagnostic function					
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

Mechanical data

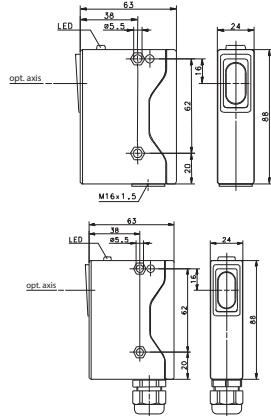
Ambient temperature (min/max)		-20°C/+70°C	-20°C/+70°C	-20°C/+70°C	-20°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP65	IP65	IP65	IP65
Enclosure material		PA	PA, red	PA	PA, red
Connection		Connect. space	Connect. space	Connect. space	Connect. space

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.

① Background suppression



88 x 63 x 24 mm				
Retro-reflective sensor Type R	Retro-reflective sensor Type R			
6 m	6 m			
Connect. space polarised	Connect. space polarised			



6555886001 OR20PS-DPTP-06.0-ALET							
6555686002 OR20PS-MARS-06.0-ALET							

10-36 VDC	12-265V AC/DC			
200 mA	3 A			
> 100 Hz	> 50 Hz			
Cyclic	SCPD external			
LED/-	LED/-			
Yes	Yes			
IR 880 nm	IR 880 nm			

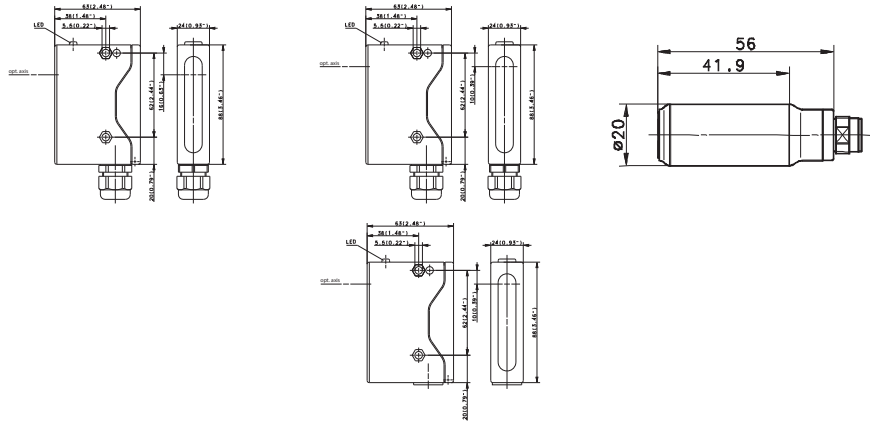
-20°C/+70°C	-20°C/+70°C			
IP65	IP65			
PA, red	PA, red			
Connect. space	Connect. space			

You will find detailed data sheets to the products under www.bernstein.eu



Optoelectronic Sensors (Type 88 x 63 mm, Ø 20 mm)

Type	88 x 63 x 24 mm	88 x 63 x 24 mm		Ø 20 mm
Operating mode	Retro-reflective sensor Type R	Through-beam sensor Type T	Through-beam sensor Type T	Diffuse-reflection sensor Type D
Sensing range	8 m	20 m	20 m	200 mm
Type of connection	Connect. space	Connect. space	Connect. space	Connector M12
Special feature				



PNP	Light activated Dark activated Programmable Type		6551886003 OR20EE-DPTP-20.0-ALET		
NPN	Light activated Dark activated Programmable				
Transmitter	Type		6551086003 OR20SE-DOOS-20.0-AV	6551086002 OR20SE-MOOS-20.0-AV	
Relay output	Type	6554686002 OR20RS-MARS-08.0-ALET		6551686004 OR20EE-MARS-20.0-ALET	
NAMUR					
Analogue	Current output Voltage output Type				6557000001 OZ20RT-DPAP-0200-SE
2-wire	DC AC				

Technical data

Rated operating voltage	U_B	12–265V AC/DC	10–36 VDC	12–265V AC/DC	10–30 VDC
Rated operating current	I_B	3 A	200 mA	–	200 mA
Switching frequency (max)	F	> 50 Hz	> 100 Hz	–	–
Short circuit-protection		SCPD external	Cyclic	SCPD external	–
Function/operating voltage indicator		LED/–	LED/–	–/LED	–/–
Sensitivity adjustable		Yes	Yes	–	Yes
Teachable					
Timer function		Yes	Yes	Yes	
Diagnostic function					
Type of light		IR 880 nm	IR 880 nm	IR 880 nm	IR 880 nm

Mechanical data

Ambient temperature (min/max)		–20°C/+70°C	–20°C/+70°C	–20°C/+70°C	–5°C/+70°C
Protection class in accordance with IEC 529, EN 60529		IP65	IP65	IP65	IP67
Enclosure material		PA, red	PA, red	PA, red	Stainless steel 1.4305
Connection		Connect. space	Connect. space	Connect. space	M12 x 1

Please refer to Accessories for reflectors, mounting brackets, cable couplers and sensor tester.

