Tippkemper®

ISO 9001:2008 / ATEX

MATRIX elektronik ag

ASSURIX Intrinsically Safe Photoelectronic Sensors

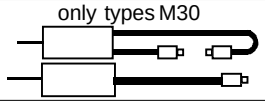
3-wire construction

Operating Manual and Control Drawing No. OM-AX-01

CE 0158 CLASSIFIED UL 24VL

Ex II 2 G Ex ia IIC T6 Gb

- Applicable in CL I, CL II, CL III, Division 1, GR ABCDEFG, HAZARDOUS LOCATIONS.
- Applicable in ATEX Ex Zones 1, 2
- Type of Ex protection: Intrinsically safe II 2 G Ex ia IIC T6 Gb.
- CLASSIFIED BY UNDERWRITER'S LABORATORIES INC. ASSIGNED CONTROL No. 24VL.
- ATEX Certification DMT 03 ATEX E003

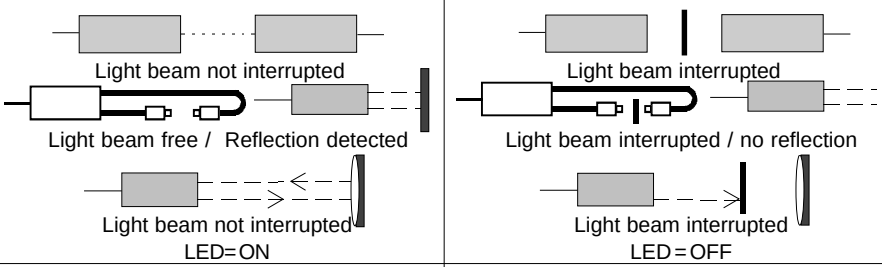
Types / Technical Data	Light Barriers		Proximity Switch		Retroreflective Barriers	
Type of Ex protection	II 2 G Ex ia IIC T6 Gb					
Designation	AX-SE-25-P18 AX-SE-25-P30	AX-SE-50-P30	AX-T-5-P18 AX-T-5-P30	AX-T-10-P18 AX-T-10-P30	AX-R-1-P18	AX-R-4-P30
Type	S:Emitter / E: Receiver		T: Proximity switch		R: Retroreflective barrier	
Range	25m	50m	0.5m Note1	1m Note1	1m Note2	4m Note2
Housing (Yellow brass, nickel plated)	...-P18 = M18 ...-P30=M30	M30	...-P18=M18 ...-P30=M30	...-P18=M18 ...-P30=M30	M18	M30
Light source, wave length	870nm				623nm	
Nominal supply voltage	12VDC (intrinsically safe)					
Current consumption	13mA	13mA	15mA	15mA	15mA	15mA
Safety ratings	Vi <=13.6VDC / Ii <= 120mA /Pi <= 800mW (in accordance with the power supply)					
Effective capacity / inductance	Ci = 150pF / Li = 7.92uH					
Response	50Hz	50Hz	100Hz	100Hz	100Hz	100Hz
Output	PNP, short circuit protected					
Operating temperature range T_{Amb}	-20°C < T_{Amb} < +60°C					
Enclosure rating, at EN 60529	IP65					
Cable, Length: 3m, shielded, blue covered	Emitter: 2 x AWG24 Receiver: 3 x AWG24		3 x AWG24		3 x AWG24	
Fibre optics connection	--		only types M30 		--	
Accessories	M18: 4 nuts M18 M30: 4 nuts M30		M18: 2 nuts M18 M30: 2 nuts M30		2 nuts M18	2 nuts M30
Accessories, not included	- Reflector (triple mirror for retroreflective barriers), D=40mm, 50mm or 83mm					

Options

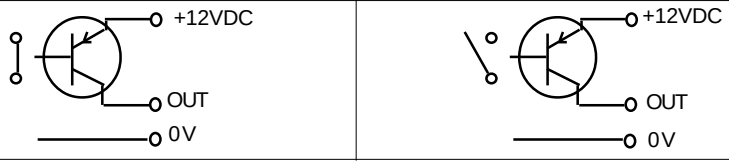
- AX-..-.. / **1kHz**: Sensors with a switching frequency of 1kHz
- AX-SE-10-P18: Light barrier with 10kHz switching frequency
- AX-SE-100-P30: Light barrier with a range of 100m
- AX-SE-56-P30-GF: Light barriers for fibre optics, high density
- AX-SE-25/50-P30-GF: Light barriers for fibre optics
- AX-R-1-P18/90°: Device with 90° viewing angle
- AX-T-5/10-P30-**NPN**: With NPN output
- AX-S/E-..-P30 **S17:** Light barriers with socket M18. Binder series 714, 4 terminals, housing M30, LED inside the socket for receiver and emitter
- AX-.-P30 **S99**: Housing M30, socket M12/ 5P, with Potentiometer and LED
- AX-R-.. **S171**: Retroreflective barriers with potentiometer for fine adjustement
- AX-R-4-P30 **S172**: Retroreflective barriers M30, socket M12 and potentiometer
- AX-SE-25-P18 **S199**: Range: 100m, housing M18
- AX-T-5/10-P18 **S201**: For applications with fibre optics

Function and LED indication

Light barriers / Proximity switch / Retroreflective barriers



Output function:
Inverted output function by changing the polarity of the supply voltage.



Connection diagram:	Devices with cable connection:	Socket S17:	Socket S99: (Pin 2: Not connected)
+12VDC	Brown	Pin 1	Pin 1 / brown
0V:	Black	Pin 3	Pin 3 / blue
Output:	Red	Pin 2	Pin 4 / black
Protection earth PA/PE	At the housing	Pin 4	Pin 5 / grey
Cable shield	Blank or white	--	--

Note 1: Range on white paper 30cm x 20cm.
Note 2: Range on reflector (triple mirror), D=83mm

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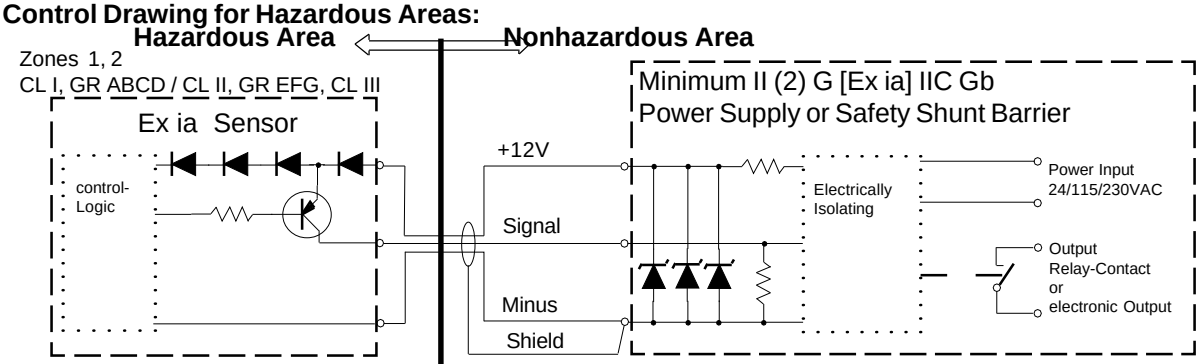
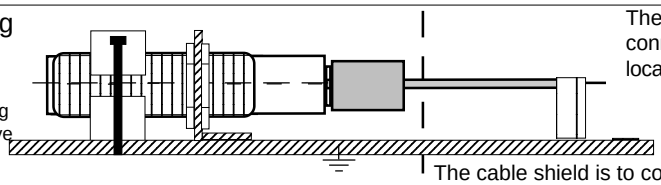
Control Drawing for Hazardous Areas:



Vmax	>=	Voc	Vmax	=	13.6V	Maximum ratings for the power supply	
Imax	>=	Ioc	Imax	=	120mA	Vo	<= 13.6V
Ci + Ccable	<=	Ca	Ci	=	150pF	Io	<= 120mA
Li + Lcablel	<=	La	L	=	7.92uH	Po	<= 800mW
T_{Amb}	<=	60°					

Equipotential Bonding prescription:

The local equipotential bonding have to be done with conductive corrosion-resistant clamps or nuts M18/M30



The end of the cable must be connected outside the hazardous location.

The cable shield is to connect at PE.

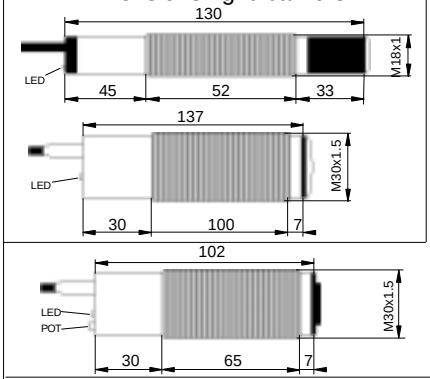
ATEX related designations

CE 0158 (Ex) II 2 G Ex ia IIC T6 Gb Certification number: DMT 03 ATEX E 003 DEKRA

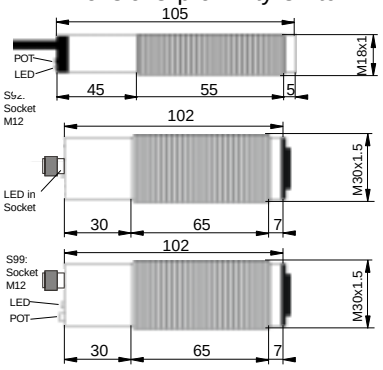
Manufacturer with address T_{Amb}: -20°C < T_{Amb} < +60°C Electrical data according to the chart

Date of production: Numeral 5 to 8 of the serial number (Week/Year)

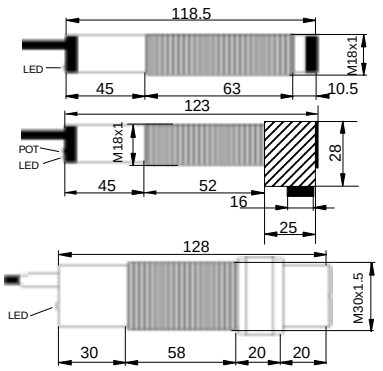
Dimensions light barriers



Dimensions proximity switch



Dimensions retroreflective barriers



Operating Manual / EC - Declaration of Conformity:

Mounting prescriptions:

Ex-Protection

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The electrical connections must be exactly as shown in the control drawing for hazardous areas. The local equipotential bonding have to be done by a reliable, noncorrosive holding of the protection earth connection. The cable must be protected against damages. To connect cables inside the hazardous locations, only use certificated Ex housings. Only original manufacture optical parts must be used . Other additional optical lenses or fibre optics are not allowed in hazardous locations. The sensor must only be supplied by an approved intrinsically safe power supply or safety shunt barrier with the minimum specification II (2) G [Ex ia] IIC Gb, mounted out of the hazardous location. Connector versions: The maximum rates of capacity and inductance of the connection cable must be respected.

Function

Light barriers: If the light beam is not interrupted the output switches to ON (+12V). If the light beam is interrupted the output switches to OFF. The load must be connected between the output and 0V.

Proximity Switches: If the sensor detects reflected light, by any object, the output is switching ON (H-Level). If the sensor detects no reflected light, the output is switched OFF.

Retroreflective light barriers: If the light beam the sensor and the reflector, is not interrupted the output switches to ON (+12V). If the light beam is interrupted the output switches to OFF. The load must be connected between the output and 0V.

Output-Mode (X-Function): By changing the polarity of the supply voltage, the output mode will be reversed. The LED function will remain unchanged.

Maintenance

No special maintenance is required. Cleaning only with a non-aggressive cleaning liquid. Equipment must only be repaired by the manufacturer.

Fibre optics

For efficiently detection solutions look for our multiple program of fibre optics, also for high temperature areas.

General Notes, disposal

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

Safety Informations

When installing and operating with the light barrier, it is necessary to take into consideration the relevant international and other national regulations. EN 60079-14, ATEX 118a, UL508, UL913 Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III Division 1, Hazardous (Classified) Locations. There is no risk on eye injuries by the diode emitters. The maximum possible exposure is less then the ratings described by the standard EN 60825-1/item 13).

UL/EC-Declaration of Conformity / Approvals:

Atex: DMT 03 ATEX E 003.
UL-Classified, Assigned Control No. 24VL / E185916.
The sensors are conform to the following standards:
UL 913, UL 508, EN 60079-0:2009, EN 60079-11:2007
EN 60825-1:2007; N 60529:2000, EN 60950-1:2006;
EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4.
Ex protection: 94/9/EG, UL 913. EMC: 2004/108/EC. Machine directive: 2006/42/EG. RoHS: 2002/95/EG
ATEX certification of quality type production of Ex devices at the directive 94/9/EC, CE 0158. Certification No: BVS 03 ATEX ZQS / E118. The conformity of the devices with the EC/UL standards and directives and the EC/UL-type examination certificate and the observation of the Quality Safety System ISO 9001:2008 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

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Tippkemper®

ISO 9001:2008 / ATEX

MATRIX elektronik ag

ASSURIX Intrinsically Safe Photoelectronic Sensors

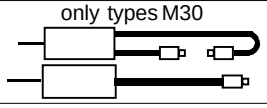
NAMUR types

Operating Manual and Control Drawing No. OM-AX-02

CE 0158 CLASSIFIED UL 24VL

Ex II 2 G Ex ia IIC T6 Gb

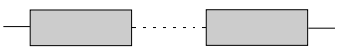
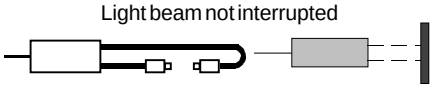
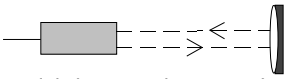
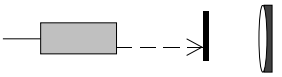
- Applicable in CL I, CL II, CL III, Division 1, GR ABCDEFG, HAZARDOUS LOCATIONS.
- Applicable in ATEX Ex Zones 1, 2
- Type of Ex protection: Intrinsically safe II 2 G Ex ia IIC T6 Gb.
- CLASSIFIED BY UNDERWRITER'S LABORATORIES INC. ASSIGNED CONTROL No. 24VL.
- ATEX Certification DMT 03 ATEX E003

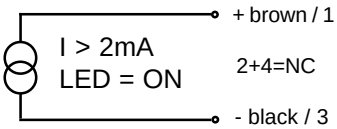
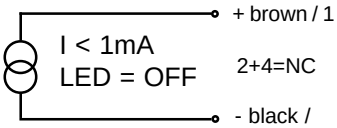
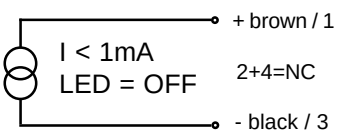
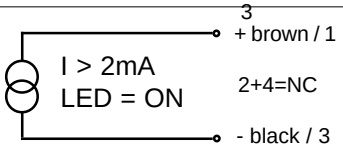
Types / Technical Data	Light Barriers		Proximity Switch		Retroreflective Barriers	
Type of Ex protection	II 2 G Ex ia IIC T6 Gb					
Designation	AX-SE-10N-N18	AX-SE-10P N18	AX-T-3N-N18 AX-T-3N-N30	AX-T-3P-N18 AX-T-3P-N30	AX-R-1N-N18	AX-R-1P-N18
Type	S:Emitter / E: Receiver		T: Proximity switch		R: Retroreflective barrier	
Range	10m	10m	0.3m Note1	0.3m Note1	1m Note2	1m Note2
Housing (Yellow brass, nickel plated)	M18	M18	...-N18=M18 ...-N30=M30	...-P18=M18 ...-P30=M30	M18	M18
Light source, wave length	870nm				623nm	
Nominal supply voltage	8.2VDC (intrinsically safe)					
Current consumption	3.5mA	3.5mA	2.5mA	2.5mA	2.5mA	2.5mA
Safety ratings	Vi <=13.6VDC / Ii <= 120mA /Pi <= 800mW (in accordance with the power supply)					
Effective capacity / inductance	Ci = 0pF / Li = 5.28uH					
Response time	25Hz	25Hz	100Hz	100Hz	100Hz	100Hz
Output	no output, status indication by current consumption (NAMUR specification)					
Operating temperature T_{Amb}	-20°C < T_{Amb} < +60°C					
Enclosure rating, at EN 60529	IP65					
Cable, Length: 2m, shielded, blue covered	Emitter: 2 x AWG24 Receiver:2 x AWG24		2 x AWG24		2 x AWG24	
Fibre optics connection	--		only types M30 		--	
Accessories, included	4 nuts M18 (2 clamps M18, optional)		M18: 2 nuts M18 (1 clamp M18, optional) M30: 2 nuts M30 (1 clamp M30, optional)		2 nuts M18 (1 clamp M18, optional)	
Accessories, not included	- Reflector (triple mirror for retroreflective barriers), D=40mm, 50mm or 83mm					

Options

- AX-R-1N/1P-N18-**90°**: Device with 90° viewing angle
- AX-R-**0.1**N-N18: Retroreflective light barrier, range=3cm .. 10cm, housing M18
- AX-R-**4N/4P-N30:** Retroreflective light barrier, range=4m, housing M30
- AX-T-**1**.-N30: Proximity switch, range=10cm, switching frequency= **1kHz**
- AX-T-**2**.-N30: Proximity switch, range=20cm, switching frequency= **700Hz**
- AX-S-10-N18 **S9:** Light barrier emitter with adjustable optical output power
- AX-R-1N/1P-N18 **S 87:** Retroreflective light barrier with potentiometer 90° viewing angle, cable length = 5m
- AX-R-... **S171:** Retroreflective light barriers with potentiometer
- AX-T-3N/P-N18 **S201**: For applications with fibre optics

Function and LED indication

	Light beam not interrupted	Light beam interrupted
Light barriers		
Proximity switch	 Light beam free / Reflection detected	 Light beam interrupted / no reflection
Retroreflective barriers	 Light beam not interrupted LED= ON	 Light beam interrupted LED = OFF

Function and LED indication Sensors Type "N" AX-E-10N-N18 AX-T-3N-N18 AX-T-3N-N30 AX-R-1N-N18	 I > 2mA LED = ON; + brown / 1; 2+4=NC; - black / 3	 I < 1mA LED = OFF; + brown / 1; 2+4=NC; - black / 3
Function and LED indication Sensors Type "P" AX-E-10P-N18 AX-T-3P-N18 AX-T-3P-N30 AX-R-1P-N18	 I < 1mA LED = OFF; + brown / 1; 2+4=NC; - black / 3	 I > 2mA LED = ON; + brown / 1; 2+4=NC; - black / 3

Note 1: Range on white paper 30cm x 20cm. Note 2: Range on reflector (Triple mirror) D=83mm

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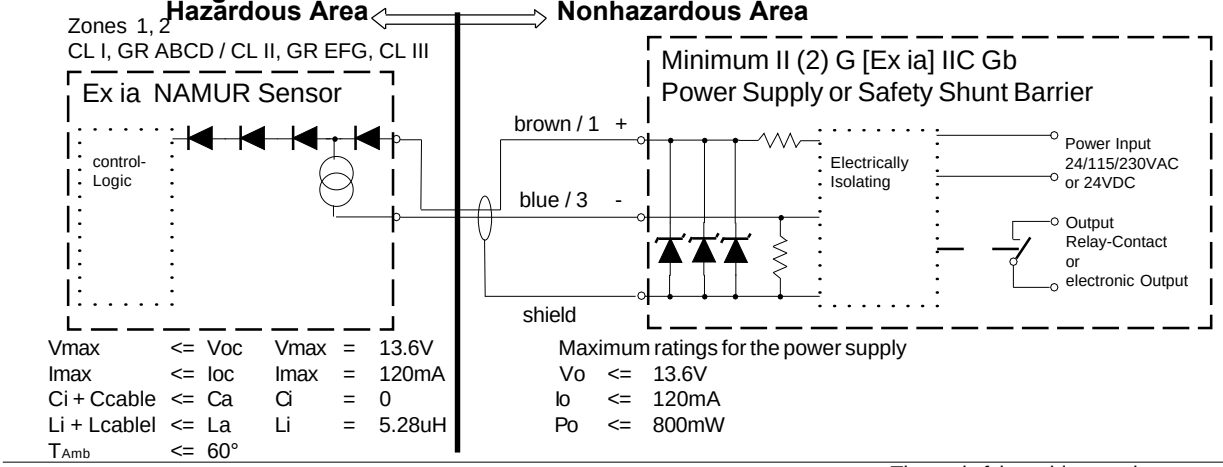
Control Drawing for Hazardous Areas:



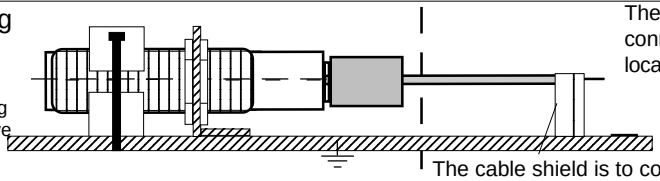
Vmax	<= Voc	Vmax	=	13.6V	
Imax	<= Ioc	Imax	=	120mA	
Ci + Ccable	<= Ca	Ci	=	0	
Li + Lcablel	<= La	Li	=	5.28uH	
T_{Amb}	<= 60°				

Maximum ratings for the power supply

Vo	<=	13.6V
Io	<=	120mA
Po	<=	800mW

Equipotential Bonding prescription:

The local equipotential bonding have to be done with conductive corrosion-resistant clamps or nuts M18/M30



The end of the cable must be connected outside the hazardous location.

The cable shield is to connect at PE.

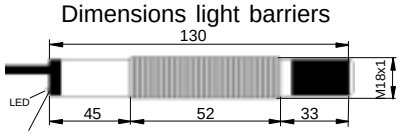
ATEX related designations

CE 0158 | (Ex) II 2 G Ex ia IIC T6 Gb | Certification number: DMT 03 ATEX E 003 DEKRA

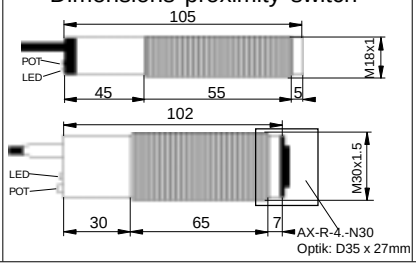
Manufacturer with address | T_{Amb}: -20°C < T_{Amb} < +60°C | Electrical data according to the chart

Date of production: | Numeral 5 to 8 of the serial number (Week/Year)

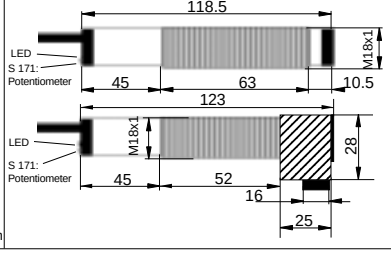
Dimensions light barriers



Dimensions proximity switch



Dimensions retroreflective barriers



Operating Manual / EC - Declaration of Conformity:

Mounting prescriptions:

Ex-Protection

It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). The electrical connections must be exactly as shown in the control drawing for hazardous areas. The local equipotential bonding have to be done by a reliable, noncorrosive holding of the protection earth connection. The cable must be protected against damages. To connect cables inside the hazardous locations, only use certificated Ex e housings. Only original manufacture optical parts must be used . Other additional optical lenses or fibre optics are not allowed in hazardous locations. The sensor must only be supplied by an approved intrinsically safe power supply or safety shunt barrier with the minimum specification II (2) G [Ex ia] IIC Gb, mounted out of the hazardous location. Connector versions: The maximum rates of capacity and inductance of the connection cable must be respected.

Function

Light barriers and retroreflective light barriers "N" types: When the light beam is not interrupted the current consumption will be >= 2mA and the LED lights up. When the light beam is interrupted the current consumption is reduced to <=1mA and the LED switches OFF.

Light barriers and retroreflective light barriers "P" types: When the light beam is not interrupted the current consumption will be <= 1mA and the LED switches OFF. When the light beam is interrupted the current consumption is increased to >=2mA and the LED lights up.

Proximity Switches "N" types: When the sensor detects diffused reflected light, the current consumption will be >= 2mA and the LED lights up. When no light will be detected the current consumption is reduced to <=1mA and the LED switches OFF.

Proximity Switches "P" types: When the sensor detects diffused reflected light, the current consumption will be <=1mA and the LED switches OFF. When no light will be detected the current consumption is increased to >=2mA and the LED lights up.

Proximity Switches types "S 146":

With selectable output mode (X-Function). By changing the polarity of the supply voltage (Blue +, Brown-), the output mode will be reversed. On standard connection (Brown=+12V) the current consumption will be >=2mA, when the sensor detects diffuse . reflected light. The supply voltage must be 11VDC to 13.6VDC.

Maintenance, General Notes, Disposal

No special maintenance is required. Cleaning only with a non-aggressive cleaning liquid. We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

Safety Informations

The sensors of the aeries AX-.. must not be used for Accident-Prevention! When installing and operating with the light barrier, it is necessary to take into consideration the relevant international and other national regulations. EN 60079-14, ATEX118a, UL508, UL913 Intrinsically Safe Apparatus and Associated Apparatus for use in Class I, II, III Division 1, Hazardous (Classified) Locations. There is no risk on eye injuries by the diode emitters. The maximum possible exposure is less then the ratings described by the standard EN 60825-1/item 13). Equipment must only be repaired or serviced by the manufacturer.

UL/EC-Declaration of Conformity / Approvals:

Atex: DMT 03 ATEX E 003.
UL-Classified, Assigned Control No. 24VL / E185916.
The sensors are conform to the following standards:
UL 913, UL 508, EN 60079-0:2009, EN 60079-11:2007
EN 60825-1:2007; N 60529:2000, EN 60950-1:2006;
EN 61000-4-2 to EN 61000-4-6, EN 61000-6-1/-2, EN 61000-6-4.
Ex protection: 94/9/EG, UL 913. EMC: 2004/108/EC. Machine directive: 2006/42/EG. RoHS: 2002/95/EG
ATEX certification of quality type production of Ex devices at the directive 94/9/EC, CE 0158. Certification No: BVS 03 ATEX ZQS / E118. The conformity of the devices with the EC/UL standards and directives and the EC/UL-type examination certificate and the observation of the Quality Safety System ISO 9001:2008 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

OM_AX_02_e17/2011-09-20/HB

ASSURIX Intrinsically Safe Laser Light Barrier AXL-S/E-80

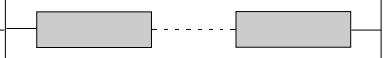
Operating Manual and Control Drawing No. Om-AxL-0e

CE 0158

II 2G

ISO 9001 ATEX

- Applicable in Hazardous Locations, Ex-Zone 1 and 2
- Intrinsically Safe - Protection Level EEx ia IIC T6
- Laser Class 2 (BG Approval)
- High EMC reliability
- ATEX approved

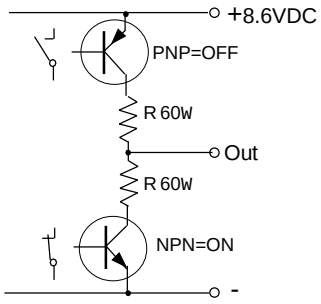
Technical Data \ Type	AXL-S/E-80
Designation	S: Emitter / E: Receiver
Laser Class / Laser Output Power	Class 2 / P < 1mW
Laser Beam Diameter	~ 8mm at a distance of 10m
Wave Length	640-680nm / visible red
Range	80m
Minimum Detectable Object Size	20mm
Switching Frequency	1000Hz
Output Response Time	0.5ms
Connection Values Ex-i Power supply	V_O <=8.6VDC / I_O <= 120mA /P_O <= 800mW
Supply Voltage	7.0 VDC up to max. 8,6 VDC intrinsically safe
Current Consumption (Normal Modus)	Emitter: 35 mA / Receiver: 6mA
Max. Power Dissipation (Normal Modus)	Transmitter: 300mW / Receiver: 52mW
Output	1 x Push-Pull
Output Impedance	60W
Housing	M30 Yellow Brass, Nickel Plated
Enclosure Rating	IP 65 according to EN 60529
Operating Temperature T_A	0°C < T_A < +50°C
Connecting Cable Emitter	2 x AWG24 (0.2mm²) + Shield / L=3m / blue covered
Connecting Cable Receiver	3 x AWG24 (0.2mm²) + Shield / L=3m / blue covered
Accessories included	2 Clamps M30 or 4 Nuts M30
Options	- Plug-type connector (Binder M30/M18, Series 714), Designation: AXL-S/E-80-C - Cable Length up to 100m - Devices with special high flexible cable for trailing, Designation AXL-S/E-80-K - Slip-on Diaphragms 5mm to 1mm
LED Indication Output Function	 Light Beam Interrupted LED extinguished
	 Light Beam not interrupted LED shows yellow
Connection Layout	

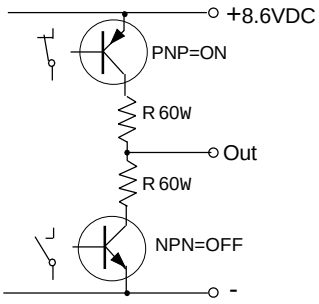
Receiver:

Standard	Highflex	Connector	
brown	brown	1	= +
blue	white	3	= -
black	green	2	= Output
white	blank	--	= Shield

Emitter:

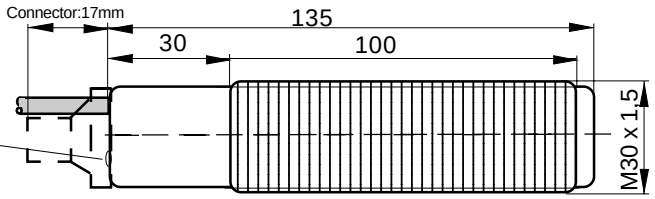
Standard	Highflex	Connector	
brown	brown	1	= +
blue	white	3	= -
white	blank	--	= Shield



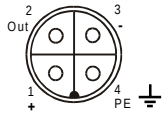


Dimensions:
(Same Dimensions for Emitter and Receiver)

LED at the Receiver
Connector Version: inside the Connector

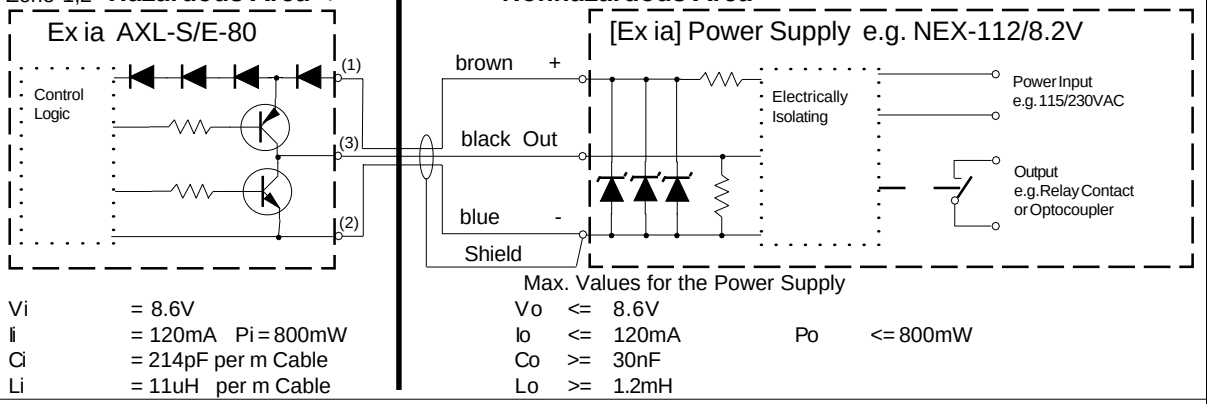


Connection layout for connector versions ..-**C**
View on the pins at the sensor



Control Drawing for Hazardous Areas:

Zone 1,2 **Hazardous Area** ⇔ **Nonhazardous Area**



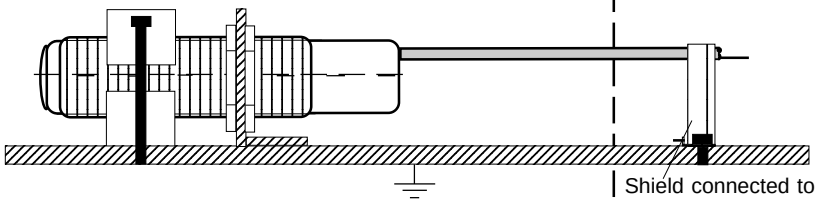
Max. Values for the Power Supply

Vi	= 8.6V			Vo	<=	8.6V	
Ii	= 120mA	Pi = 800mW		Io	<=	120mA	Po <= 800mW
Ci	= 214pF per m Cable			Co	>=	30nF	
Li	= 11uH per m Cable			Lo	>=	1.2mH	

Equipotential Bonding:

The local equipotential Bonding have to be done with conductive corrosion-resistant clamps or nuts M30

The end of the cable must be connected outside the hazardous locations to an intrinsically safe power supply.



Shield connected to PE large-surfaced

Operating Manual

Mounting prescriptions

Ex-Protection

It is necessary to take into consideration the valid international and national rules and regulations. The electrical connections must be exactly as shown in the control drawing for hazardous areas. The local equipotential bonding have to be done by a reliable, noncorrosive holding of the protection earth connection. The cable must be protected against damages. To connect cables inside the hazardous locations, only use certificated Ex e housings. Additional optical lenses are not allowed in hazardous locations. The sensor must only be supplied by an approved intrinsically safe power supply type [EEx ia], mounted out of the hazardous location. Connector versions: The maximum rates of capacity and inductivity of the connection cable must be respected.

Mounting Prescriptions

Because Lasers have a very small aperture angle, mount the light barriers free from vibrations and shocks. If it is practicable, protect the lenses from contamination. Do not exceed the maximum ratings. The electrical connections must exactly as shown in the connection layout. The cable shield must be connected short. The cable shield should be connected to the protection earth, large surfaced. Connection cables must not be installed parallel to high voltage cables.

Function:

If the light beam between emitter and receiver is not interrupted the PNP-Transistor is switched ON (H level) and the NPN-Transistor is switched OFF. If the light beam between emitter and receiver is interrupted the PNP-Transistor is switched OFF (L level) and the NPN-Transistor is switched ON.

Laser Safety

Safety Notes for Laser Installations of Class 2.
- The instructions for planning and installation must be followed in accordance with EN 60825-1
- Do not stare into Laser Beam

General Safety Informations

For installing and using the Laser Light Barrier it is necessary to take into consideration the relevant international and other national regulations:
ATEX118a, EX-RL, ElexV, TrbF, TRD, UVV
Standards met:
- EN 50014, EN 50020, EN 50081-1/-2, EN 50082-1/-2, EN 60825-1
- Ex-Protection 94/9/EG (ATEX 100a)
- Machine Directive 89/392/EWG, 91/368/EWG, 93/44/EWG, 93/68/EWG
- Low Voltage Directive 73/23/EWG, 93/68/EWG
- EMC 89/336/EWG, 91/263/EWG, 92/31/EWG, 93/68/EWG

Maintenance

The Laser Light Barrier does not require any special maintenance. Contaminated lenses are to clean with a non aggressive medium. Equipment must only be repaired or serviced by the manufacturer.

General Notes

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

Approvals

DMT 00 ATEX E020

OmAxL0_e1,SEP.12,00/HB

ASSURIX Intrinsically Safe Laser Light Barrier AXL-S/E-51

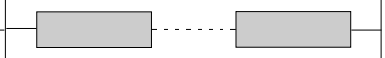
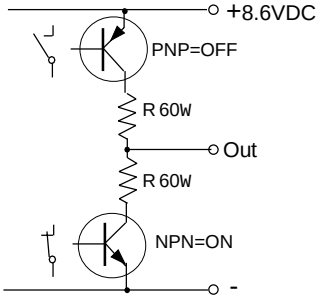
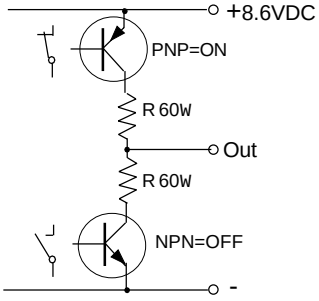
Operating Manual and Control Drawing No. Om-AxL-1e

CE 0158

II 2G

ISO 9001 ATEX

- Applicable in Hazardous Locations, Ex-Zone 1 and 2
- Intrinsically Safe - Protection Level EEx ia IIC T6
- Laser Class 2 (BG Approval)
- High EMC reliability
- ATEX approved

Technical Data \ Type	**AXL-S/E-51**
Designation	S: Emitter / E: Receiver
Laser Class / Laser Output Power	Class 2 / P < 1mW
Laser Beam Diameter	~ 8mm at a distance of 10m
Wave Length	640-680nm / visible red
Range	50m
Minimum Detectable Object Size	11mm (without additional slip-on diaphragm)
Switching Frequency	1000Hz
Output Response Time	0.5ms
Connection Values Ex-i Power supply	V_O <=8.6VDC / I_O <= 120mA /P_O <= 800mW
Supply Voltage	7.0 VDC up to max. 8,6 VDC intrinsically safe
Current Consumption (Normal Modus)	Emitter: 35 mA / Receiver: 6mA
Max. Power Dissipation (Normal Modus)	Transmitter: 300mW / Receiver: 52mW
Output	1 x Push-Pull
Output Impedance	60W
Housing	M18 Yellow Brass, Nickel Plated
Enclosure Rating	IP 65 according to EN 60529
Operating Temperature T_A	0°C < T_A < +50°C
Connecting Cable Emitter	2 x AWG24 (0.2mm²) + Shield / L=3m / blue covered
Connecting Cable Receiver	3 x AWG24 (0.2mm²) + Shield / L=3m / blue covered
Accessories included	2 Clamps M18 or 4 Nuts M18
Options	- Plug-type connector (Binder M18, Series 714), Designation: AXL-S/E-51-**C** - Cable Length up to 100m - Devices with special high flexible cable for trailing, Designation AXL-S/E-51-**K** - Slip-on Diaphragms 5mm to 1mm
LED Indication Output Function	 Light Beam Interrupted LED extinguished	 Light Beam not interrupted LED shows yellow
Connection Layout		

Receiver:

Standard	Highflex	Connector	
brown	brown	1	= +
blue	white	3	= -
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Emitter:

Standard	Highflex	Connector	
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blue	white	3	= -
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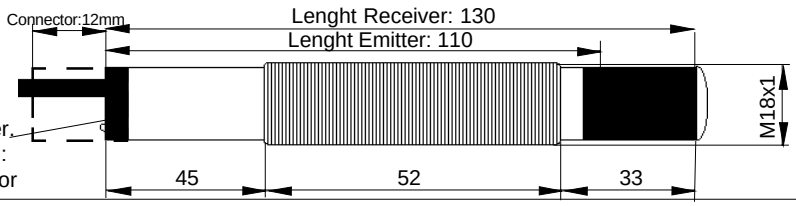
mailbox@sentronic.com
www.sentronic.com

Dimensions:

(Same Dimensions for Emitter and Receiver)

LED at the Receiver, Connector Version: Inside the Connector



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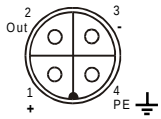

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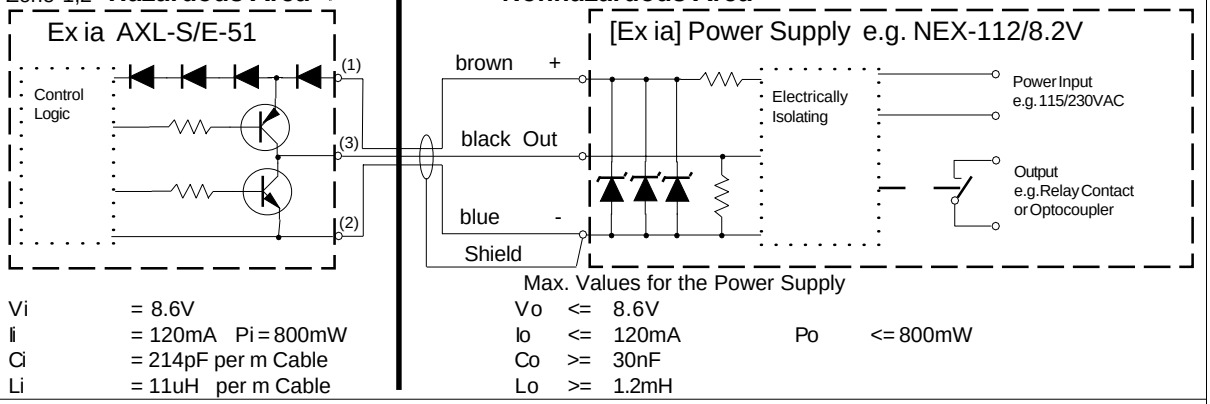

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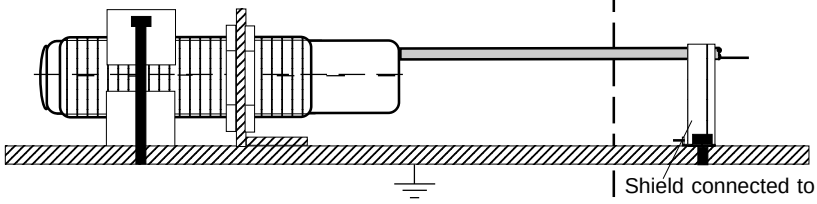

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