3.1

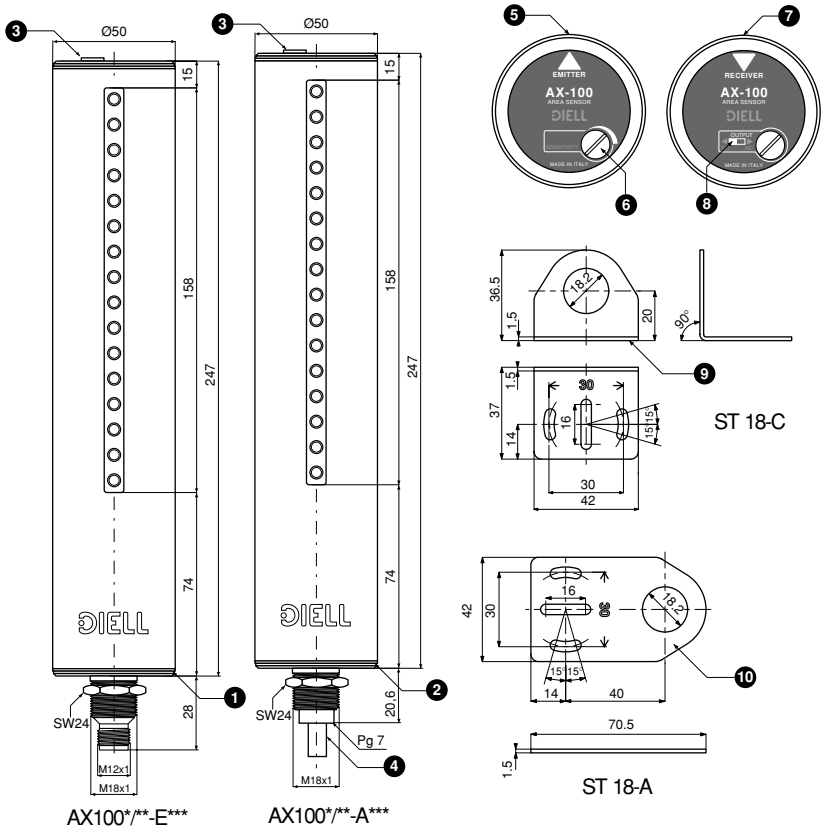
SERIE AX100

Medium resolution area sensors 12-24DC

- Controlled area hight 150mm
- Sensing range up to 2m
- Microcontrolled unit
- Analogic outputs (4-20mA, 0-10V)
- Exclusive housing (patented)
- Very quick fixing by M18x1 standard connection
- M12 standard connector exit
- Cable exit for models with analogic outputs
- Sensitivity adjustment available
- 3 indicator LEDs on both units
- Timing function available
- IP65 protection degree
- Complete protection against electrical damage

CE

DIMENSIONAL DRAWING



Key

1	M12 plug-in exit (*)	6	Slot for 1 turn trimmer
2	Cable exit for receiver with analogic outputs	7	Receiver with NO/NC selectable output AX100R/0*-****
3	Protection screw. Remove the screw to reach at the adjustment	8	Dip-switch slot for NO/NC selection
4	Cable 4x0,34mm^2+ 2x0,22mm^2 shielded, Ø7,5mm, PVC, 5m	9	ST 18-C right angle brackets, included
5	Emitter with sensitivity adjustment AX100S/00-****	10	ST 18-A axial brackets, included

(*) Connectors **CD12L/0B-050A0** included

ORDERING SYSTEM

A X 1 0 0 S / 0 0 - E A 0 0

serie
- medium resolution area sensor — AX10

model
- emitter with sensitivity adjustment — S
- receiver for objects detection — R

output state
- NO/NC output, Analogic outputs — 0
- emitter — 0

logic
- emitter — 0
- NPN output — N
- PNP output — P
- NPN output+analogic — A

timing function receiver
- 00 — none
- 10 — (1) 100ms delay

Øobject / distance / response time
- A — (2) Ø5-12mm / 2m / 10ms
- C — (2) Ø4-8mm / 1m / 3ms

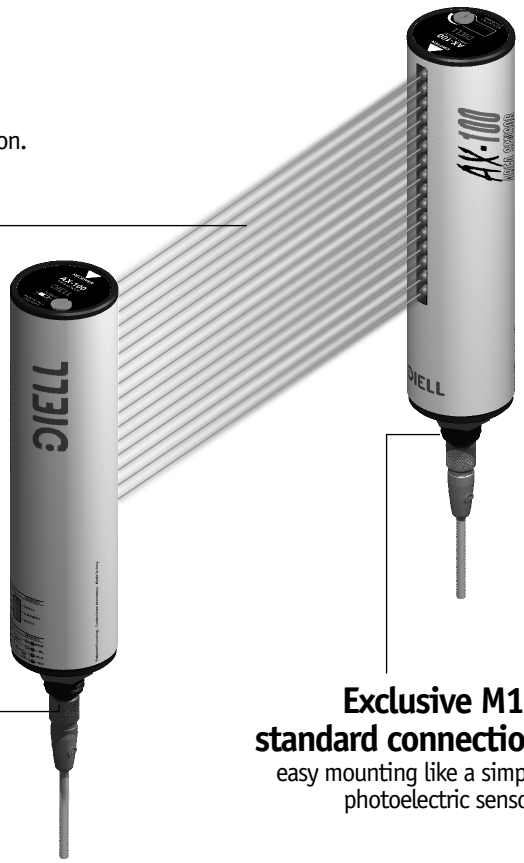
cable exit
- E — M12 standard plug-in exit
- A — cable exit for analogic version

(1) models with different delays are available on request

Note: Models with holes detection function are available

Medium resolution area sensors

A new area sensor with protected area hight 150mm for detecting objects on conveyors or coming out from areas by random position.
16 optic pairs; the microcontroller with cross-beam software, allows detection of small objects with diameter of only 5-12mm.
Patented cylindrical housing and M18 standard fixing grant a very quick installation.



Detection by 150mm area height and sensing range up to 2m

AX100 serie generates a **grid of 16 beams**, which is able to intercept very small objects (down to a **diameter of 5mm**) by every position within the controlled area.

Operation and diagnostic test by microcontroller

M12 standard plug-in exit

Exclusive M18 standard connection

easy mounting like a simple photoelectric sensor.

SPECIFICATIONS		
Model	**AX100*/**-*A****	**AX100*/**-*C****
Nominal sensing distance Sn	2m	1m
Controlled area height	150mm	
Minimum detectable object	Ø5-12mm	
Minimum detectable object for analogic outputs	Ø10-12mm, min	
Emission	infrared (880nm) modulated	
Differential travel	≤10%	
Repeat Accuracy	5%	
Tollerance	0 / 20% of the nominal sensing distance Sn	
Operating voltage	12-24Vdc (standard) - 15-24Vdc (with analogic outputs)	
Ripple	≤10%	
No-load supply current	50mA (receiver) - 100mA (receiver with analogic outputs) - 100mA (emitter)	
Load current	100mA	
Leakage current	≤10µA (at 30Vdc)	
Voltage drop	1,2Vmax. (I_L=100mA)	
Output type	NPN or PNP, NO / NC selectable - NPN, NO/NC + 2 analogic outputs	
Analogic output (AX100R/0A-AA*0 only)	0-10V(in voltage); 4-20mA (in current)	
Excess gain	2 (at the maximum distance)	
Angular displacement	3° (emitter) - 6° (receiver) at the maximum distance	
Response time	10ms	3ms
Timing function	fixed (from 0 to 100ms)	
Time delay before availability	500ms	
Supply electrical protections	polarity reversal, transient	
Output electrical protections	short circuit (autoreset)	
Temperature range	0...+50°C (without freeze)	
Temperature drift	10% Sr	
Interference to external light	1500 lux (incandescent lamp), 4500 lux (sunlight)	
Protection degree (DIN 40 050)	IEC IP65	
Emitter's LED indicators	green (supply), red (alarm sync.), yellow (area state)	
Receiver's LED indicators	green (supply), red (alignment), yellow (output state)	
Housing material	PMMA	
Tightening torque	5Nm (plastic nut) - 25Nm (metal nut)	
Weight (approx.)	500g (standard models); 920g (models with analogic outputs)	

DIAGNOSTICS

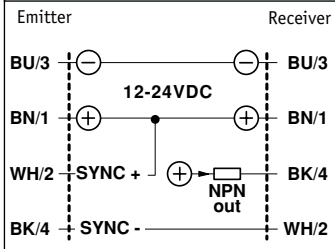
LED	State	Operation	Check
GREEN receiver SUPPLY	stable on unstable on off	Supply is present and stable Supply is present but not stable No supply or voltage lower than 8Vdc	- **Supply** **Supply**
RED receiver ALIGNMENT	full on light on off blinking on	No alignment Partial alignment or short signal Correct alignment and sufficient signal Receiver does not function correctly or output short circuit	**Alignment *** **Alignment *** - **Wiring or failure**
YELLOW receiver OUTPUT	on off	Output in ON state Output in OFF state	- -
GREEN emitter SUPPLY	stable on unstable on off	Supply is present and stable Supply is present but not stable No supply or voltage lower than 8Vdc	- **Supply** **Supply**
RED emitter SYNC. ALARM	off on	Synchronism property received Synchronism is not received or emitted	- **Wiring or failure**
YELLOW emitter AREA STATE	on off	Engaged area or uncorrect alignment Free area or correct alignment	**Alignment *** -

* by free area

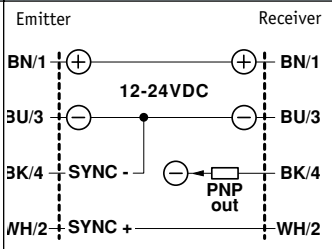
3.1

WIRING DIAGRAMS

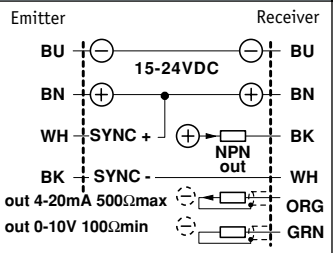
NPN output



PNP output



Analogic output



In case of combined load, resistive and capacitive, the max. admissible capacity is 0,2 µF, for max. output voltage and current.

CONNECTORS

M12