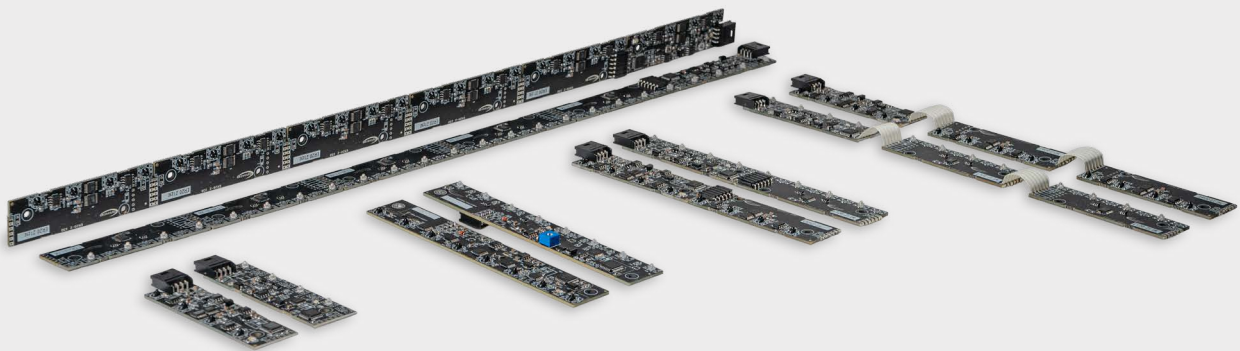


EOS 140

v1.2



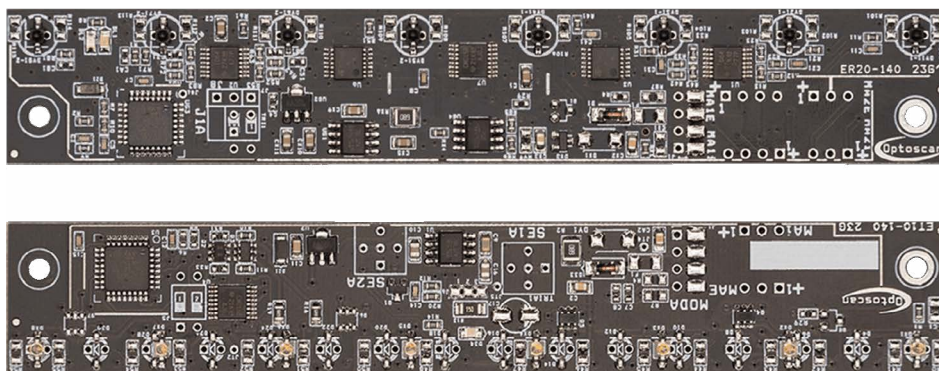
Datasheet

Barriers for vending machines



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EOS 140	
Product presentation	page 3
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Product description

The EOS family is a line of presence photoelectric barriers without housing, characterized by their small size, with a minimum thickness of only 4mm which makes them easy to install in tight spaces.

Resistant to cold and humidity, immune to sunlight and other disturbances of an optical or electrical nature.

EOS barriers are available in various models, with different lengths, resolutions and a wide range of customization options.

Thickness	from 4mm
Length	23mm
Detection height	140mm
Resolution	4 - 8mm
Installation range	from 50mm to 8m
Disturbance immunity	- sunlight: up to 200000 Lux - optical disturbance - electrical disturbance
Working temperature	-20°C/+50°C

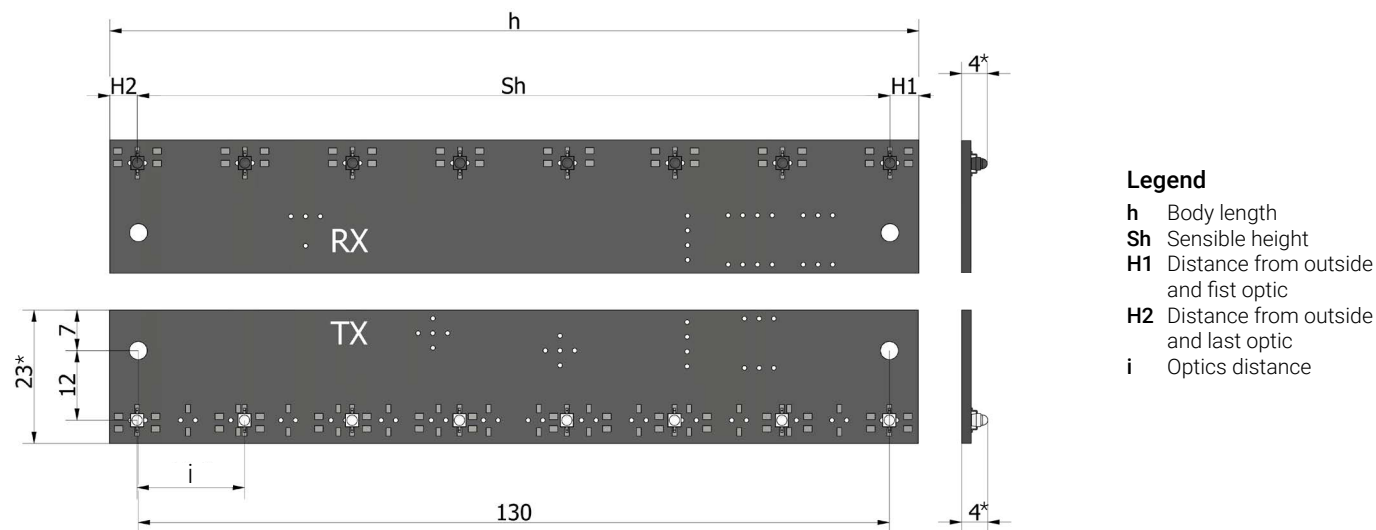
Advantages

- Compact size of 4mm x 23mm for easy integration into systems
- Customizable configuration for every need thanks to the wide range of options
- High immunity to sunlight, optical and electrical disturbances
- Suitable for operation in refrigerated environments (Tmin: -20°C) and in the presence of humidity

Applications

- Vending machines (including refrigerated)
- Pedestrian traffic control
- Mold ejection control
- Part counting on production lines
- Material presence control in plant outputs

Mechanical dimensions



**Can change based on options.*

Models

Model	Resolution	Number of Optics		i	h	Sh	Ph*	H1	H2	Maximum response time	Power consumption with heater
	(mm)	RX	TX	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(ms)	(mA)
EOS 4-140	4	8	16	9,3	140	130	146	5	5	1,92	720
EOS 8-140	8	8	8	18,6	140	130	146	5	5	0,96	480

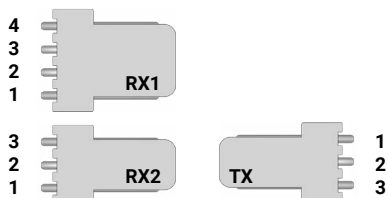
*The term "**Ph**" refers to the height of the area where an object with a diameter equal to the resolution can be detected.

Technical specifications

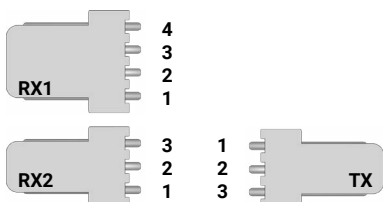
Resolution:	4 - 8mm
Body length:	140mm
Sensible height:	130mm
Installation range:	from 50mm to 8m
Outputs:	push/pull, Dark ON oppure Dark OFF, 50mA max, protected from short circuits
Sunlight immunity:	up to 200'000 lux
Mounting holes distance:	130mm

Electrical connection scheme whit interconnection and without test input

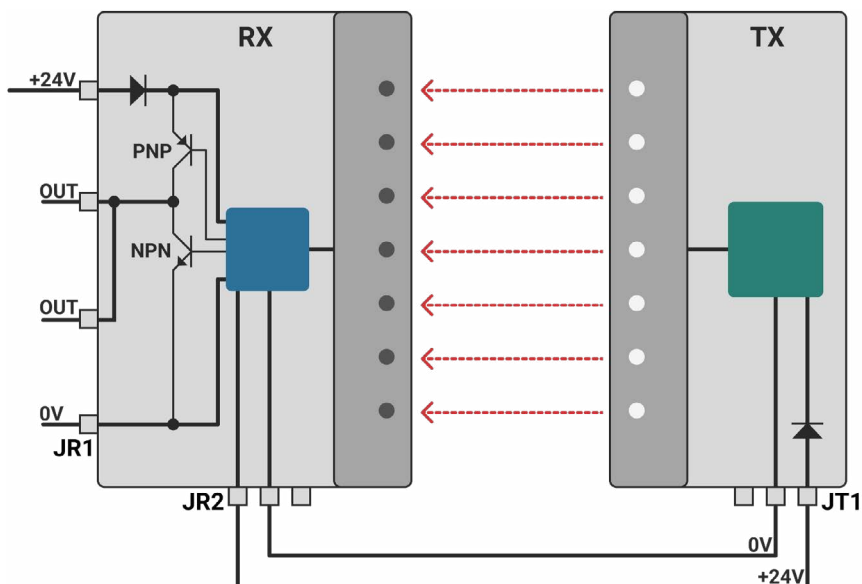
MMAe - MMAi connection



MMPe - MMPi connection

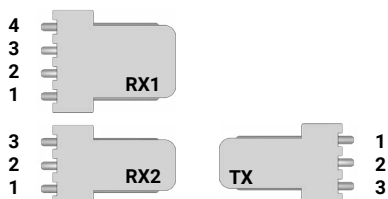


Pin	RX1	RX2	TX
1	+ 24 Vdc	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc	0 Vdc
3	Out		
4	0 Vdc		

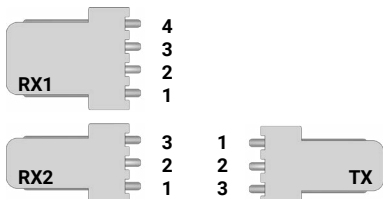


Electrical connection scheme with interconnection and test input

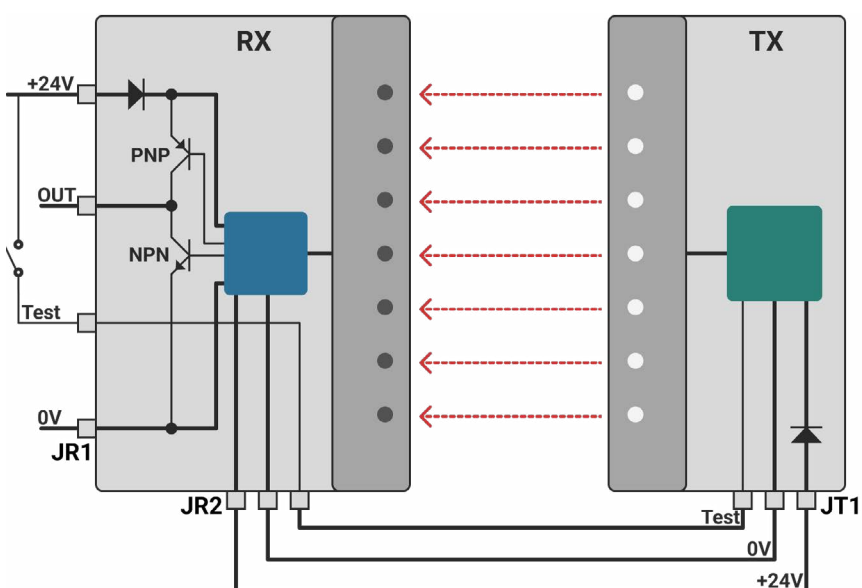
MMAe - MMAi connection



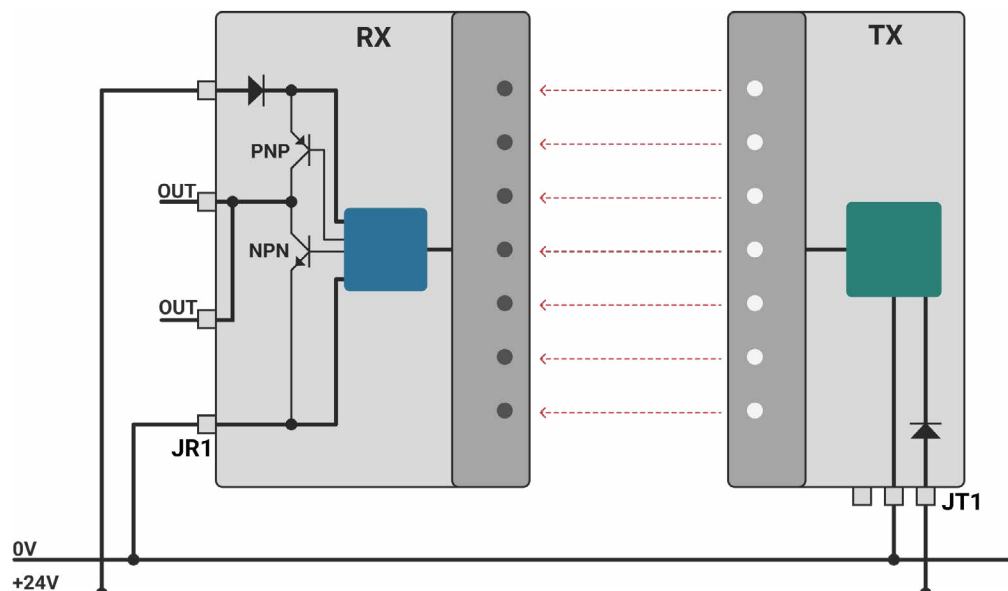
MMPe - MMPi connection



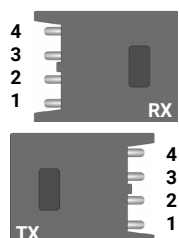
Pin	RX1	RX2	TX
1	+ 24 Vdc	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc	0 Vdc
3	Test	Test	Test
4	0 Vdc		



Electrical connection scheme without interconnection and without test input

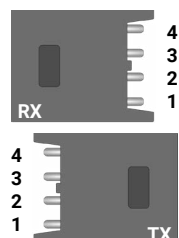


ModA connection



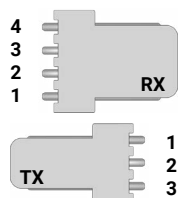
Pin	RX	TX
1	0Vdc	0Vdc
2	+24Vdc	+24Vdc
3	Out	
4	Out	

ModP connection



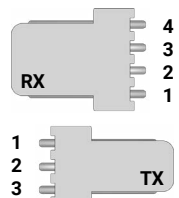
Pin	RX	TX
1	0Vdc	0Vdc
2	+24Vdc	+24Vdc
3	Out	
4	Out	

MAe - MAi connection



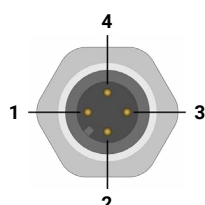
Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc
3	Out	
4	0 Vdc	

MPe - MPi connection



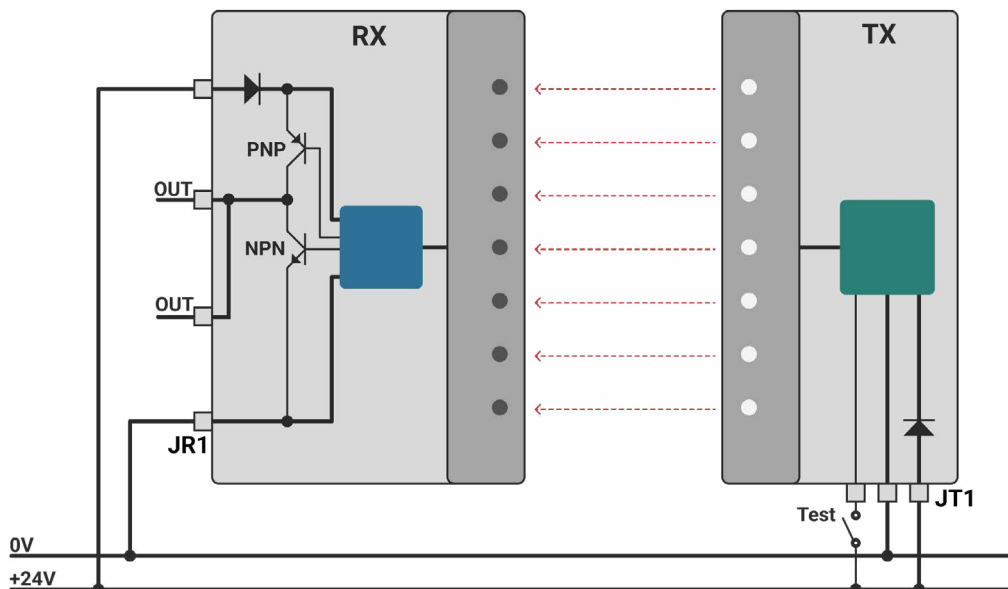
Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc
3	Out	
4	0 Vdc	

CavM12 - CavM8 connection

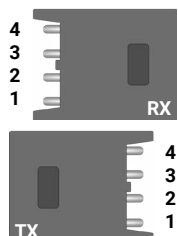


Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	
3	0 Vdc	0 Vdc
4	Out	

Electrical connection scheme without interconnection and with test input

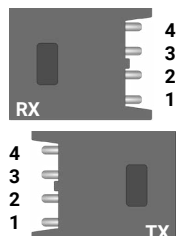


ModA connection



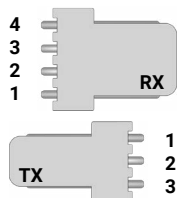
Pin	RX	TX
1	0Vdc	0Vdc
2	+24Vdc	+24Vdc
3	Out	Test
4	Out	

ModP connection



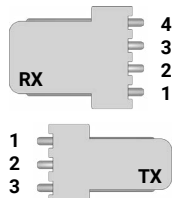
Pin	RX	TX
1	0Vdc	0Vdc
2	+24Vdc	+24Vdc
3	Out	Test
4	Out	

MAe - MAi connection



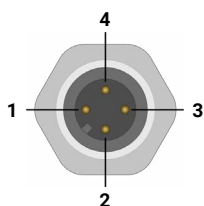
Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc
3	Out	Test
4	0 Vdc	

MPe - MPi connection



Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	0 Vdc
3	Out	Test
4	0 Vdc	

CavM12 - CavM8 connection



Pin	RX	TX
1	+ 24 Vdc	+ 24 Vdc
2	Out	Test
3	0 Vdc	0 Vdc
4	Out	

Range

Options

Minimum and maximum installation distance between transmitter and receiver

The standard range is identified by the code **L1**.

Code Lx	Installation range
L03	from 50 to 300mm
L1	from 200 to 1000mm
L4	from 500 to 4000mm
L6	from 500 to 6000mm
L8	from 500 to 8000mm

Features

Options

LT – Heater

Option that allows barriers to operate in conditions with temperatures down to -20°C, such as refrigerated vending machines.

R - Tropicalization

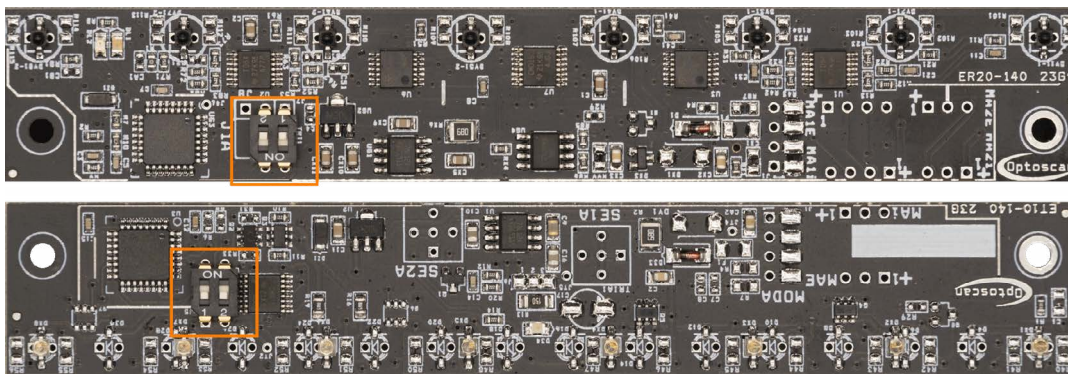
Weatherproofing allows the barriers to operate correctly even in high humidity environments.

T - Test Input

Option that simulates the interruption of the beams to allow for the verification of the correct operation of the system. Can be activated from the outside.

Code – Coding

Option that allows the communication between the transmitter and receiver to be coded to eliminate interference in the case of multiple adjacent barriers being positioned. The code can be set using an internal selector.



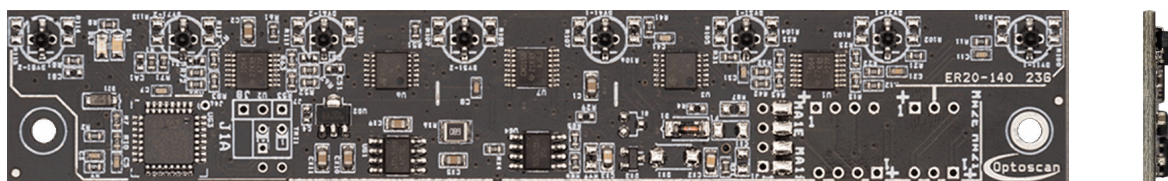
Optics

Options

The direction of the photodiodes can be defined according to the application requirements: in line with the holes or perpendicular to the holes. The following are the possible options based on the range.

F - Front

Photodiodes positioned parallel to the mounting holes, available up to **L1**.

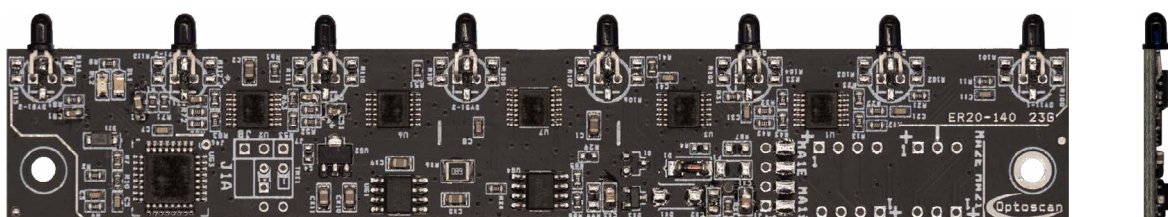


Photodiodes positioned parallel to the mounting holes, available above **L1**.

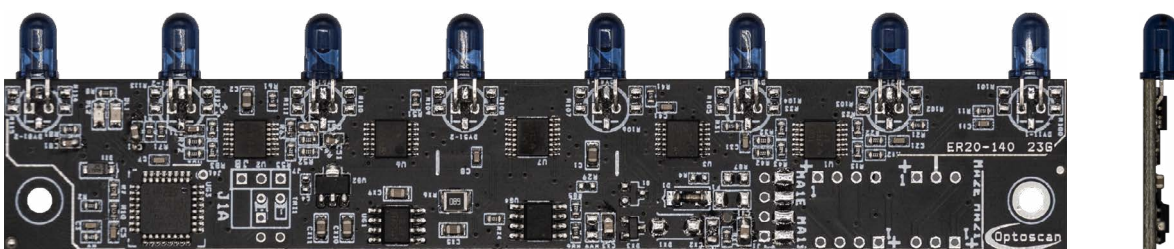


S - Side

Photodiodes positioned perpendicular to the mounting holes, available up to **L1**.



Photodiodes positioned perpendicular to the mounting holes, available above **L1**.



Timer

Options

The timer keeps the **receiver** output in the ON state for the set time.

If not specified otherwise, the standard timing is 20 ms.

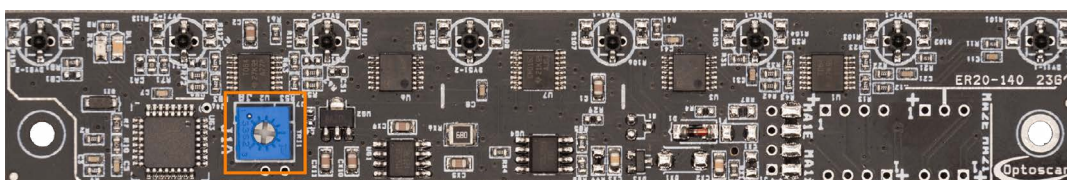
TF0 – Fixed 1ms Timer

In the case of very close objects passing each other, the standard timing may detect a single object.

With the **TF0** option, there is a fixed output timing of 1ms.

TR – Adjustable Timer

Variable timer with trimmer. The maximum time must be defined at the time of order: available 0.5s (TR0.5) or 1s (TR1).



Sensibility adjustment

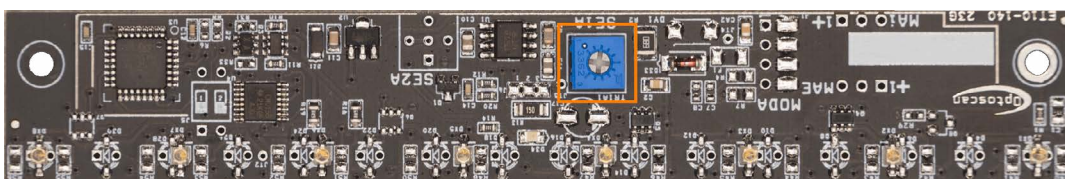
Options

Allows to adjust the **transmitter** power to prevent reading errors caused by indirect reflection of the beams. Necessary when installing the barriers near metal sheets or other reflective surfaces.

Below are the available positions for the power adjustment trimmer.

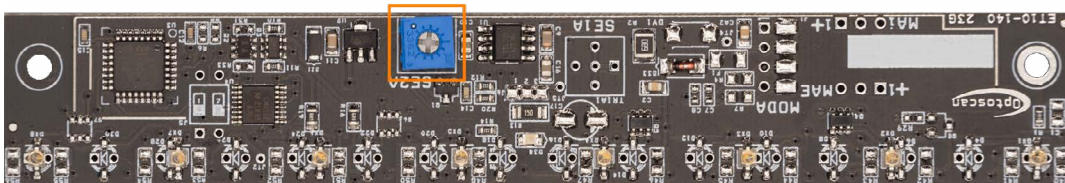
SE1a

Front side trimmer position 1 (standard)



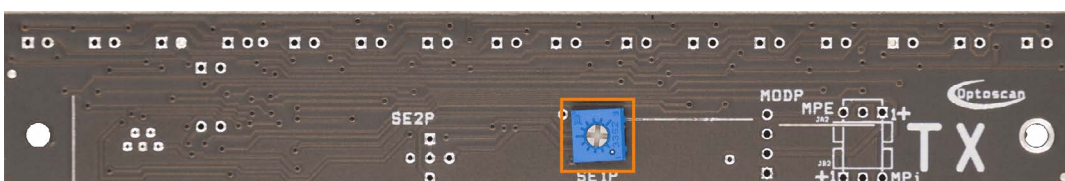
SE2a

Front side trimmer position 2.



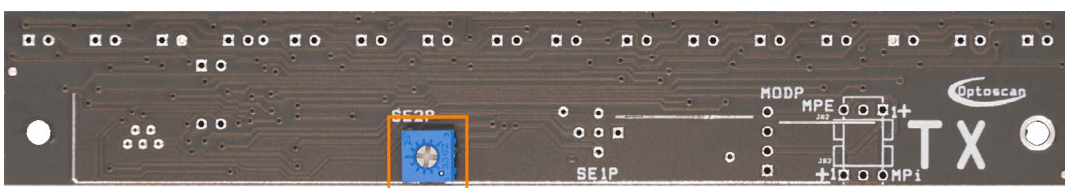
SE1p

Back side trimmer position 1



SE2p

Back side trimmer position 2



0

Without trimmer.

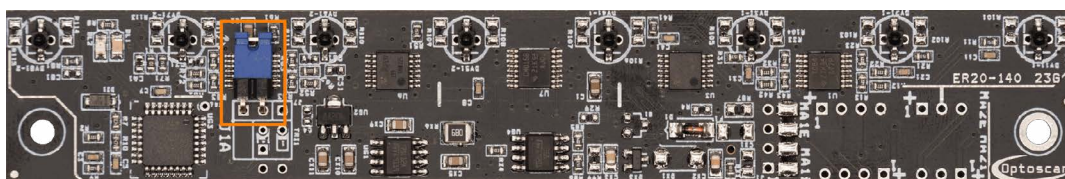
Output mode selection

Options

Option to select the output state 0V or 24V when the beam is interrupted via **jumper**, **DIP switch**, **external cable**.

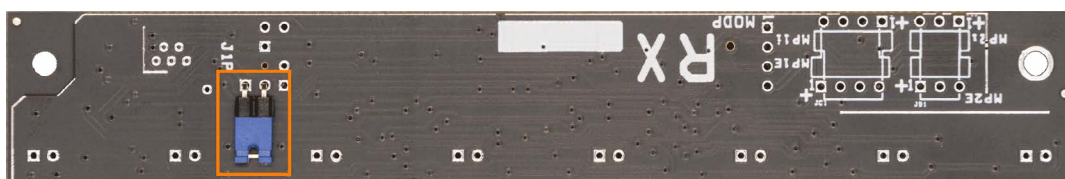
JAi

Front side jumper towards photodiodes



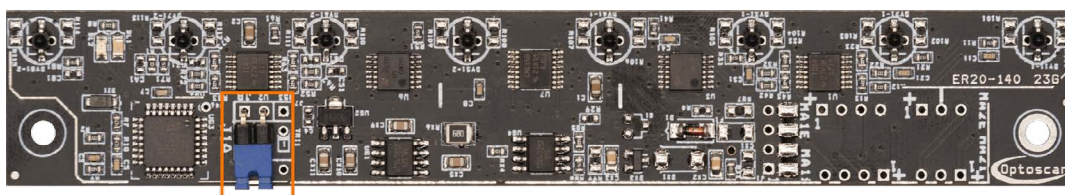
JPi

Back side jumper towards photodiodes (standard)



JAe

Front side jumper towards outside



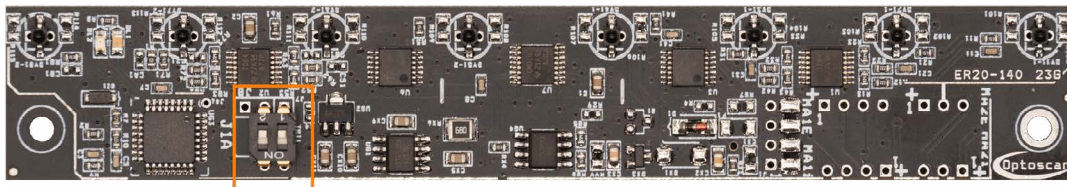
JPe

Back side jumper towards outside



SL

Front side DIP Switch



PNSE

Output mode selection via external cable

PC

24V output when beam is interrupted (without selection, to be defined at the time of order)

PA

0V output when beam is interrupted (without selection, to be defined at the time of order)

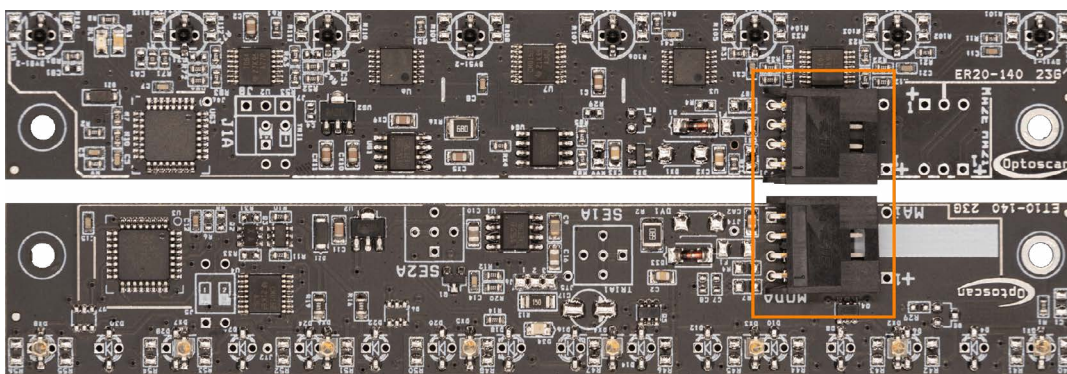
Connections

Options

It is possible to choose the desired connection type, available options below.

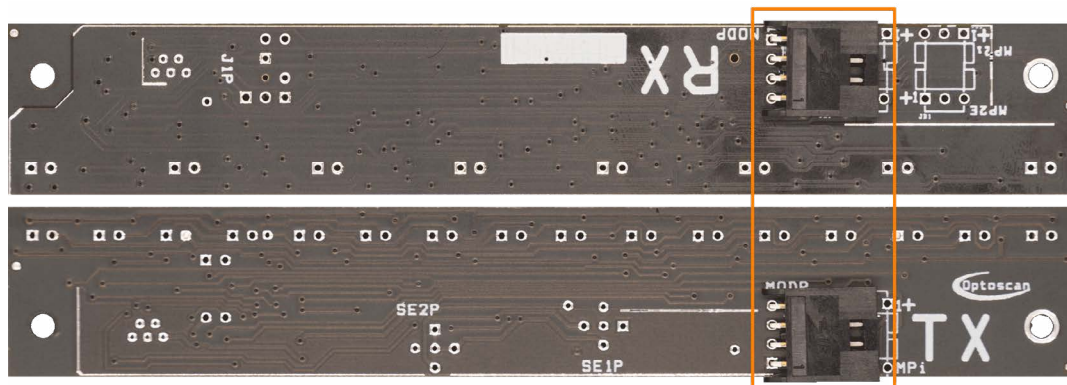
ModA

Front side AMPMODU MOD II connector



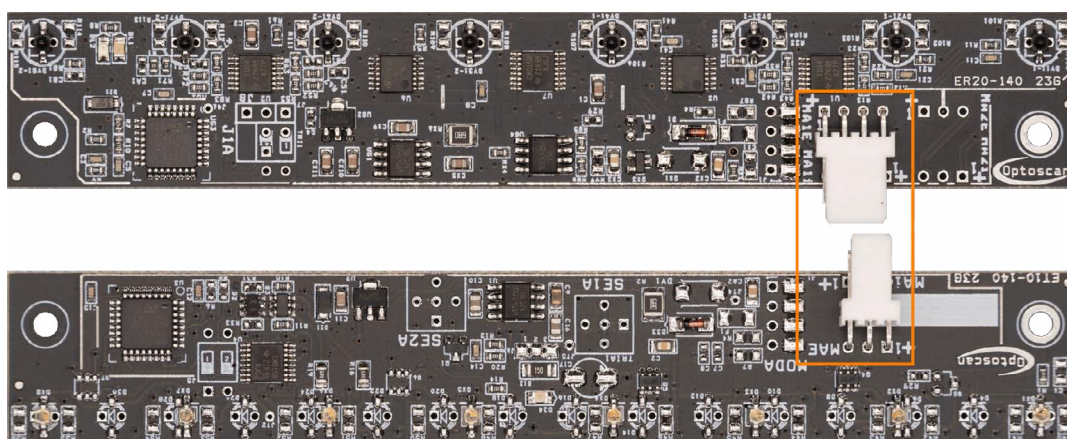
ModP

Back side AMPMODU MOD II connector



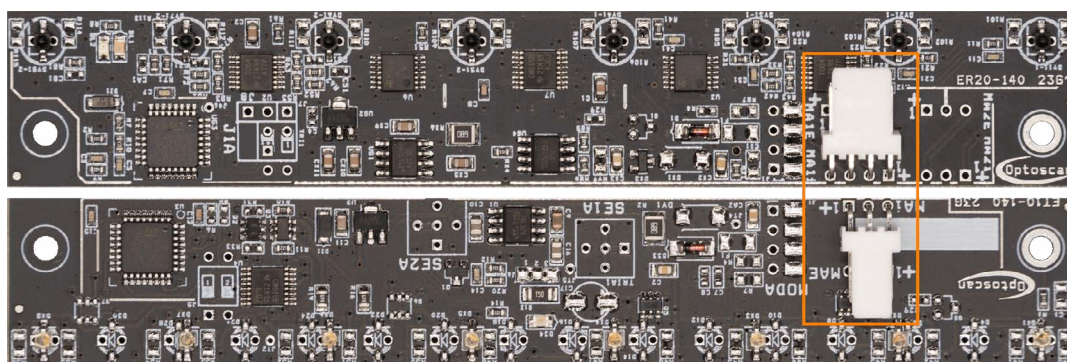
MAe

Front side MTA connector placed towards the outside



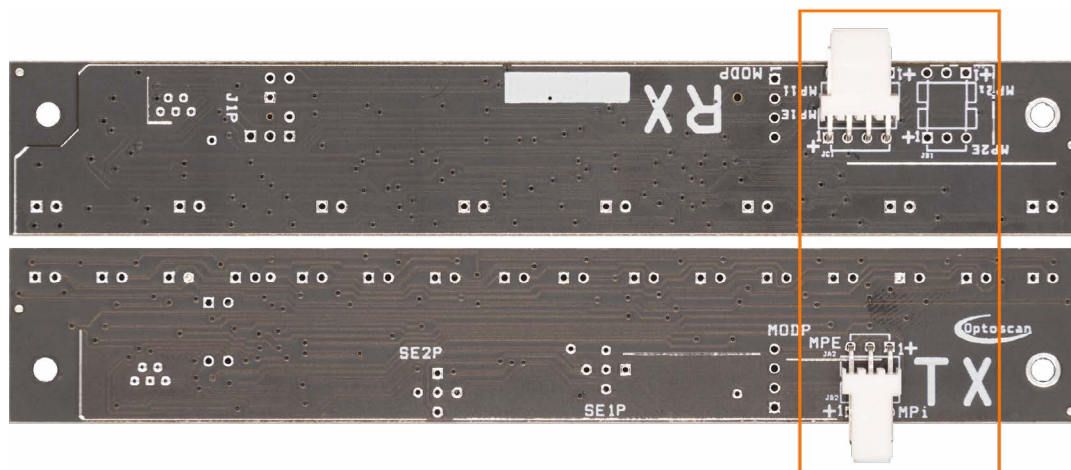
MAi

Front side MTA connector placed towards the inside



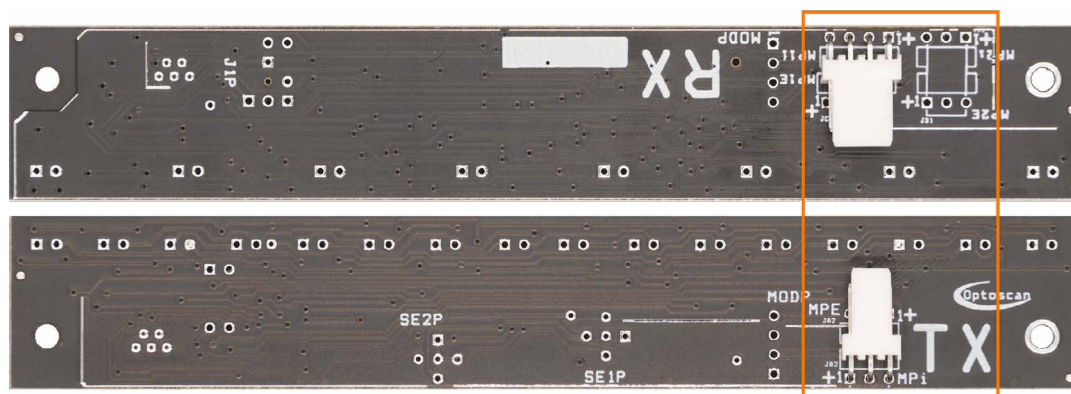
MPe

Back side MTA connector placed towards the outside



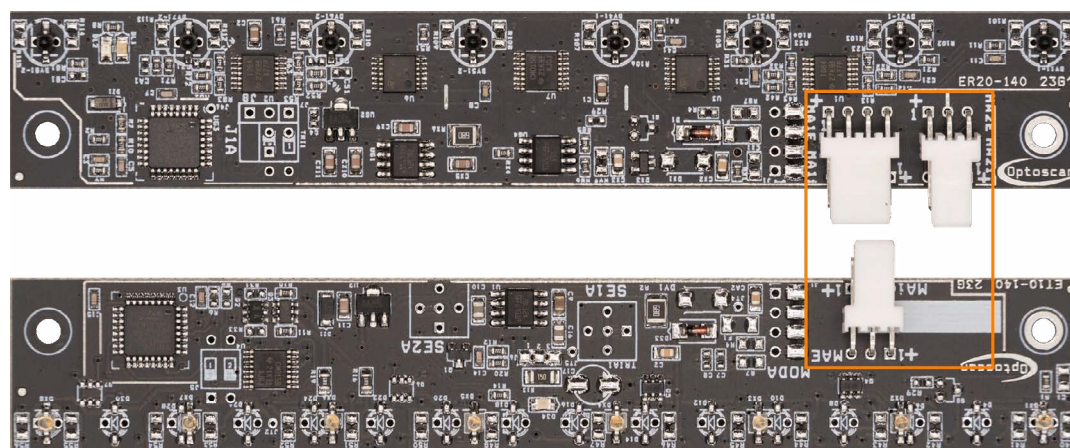
MPI

Back side MTA connector placed towards the inside



MMAe

Front side connection placed towards the outside

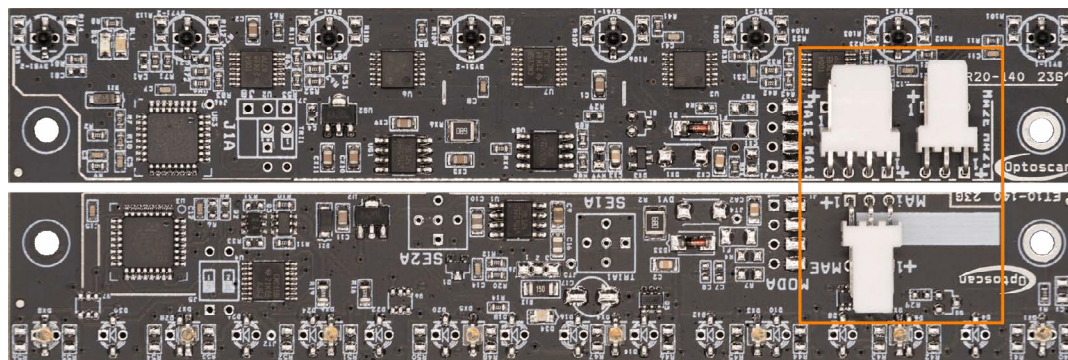


RX: MTA 4 poles +
interconnection via
MTA 3 poles

TX: MTA 3 poles

MMAi

Front side connection placed towards the inside

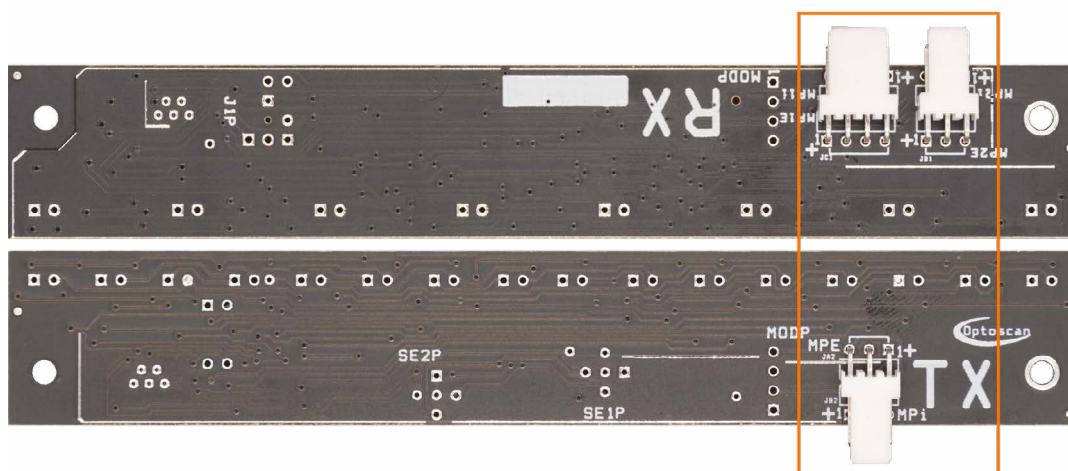


RX: MTA 4 poles +
interconnection via
MTA 3 poles

TX: MTA 3 poles

MMPe

Back side connection placed towards the outside

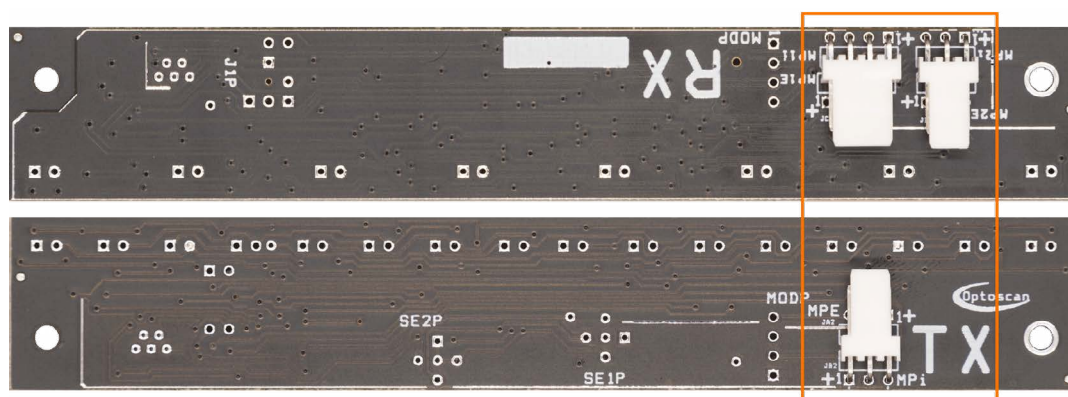


RX: MTA 4 poles +
interconnection via
MTA 3 poles

TX: MTA 3 poles

MMPi

Back side connection placed towards the inside.

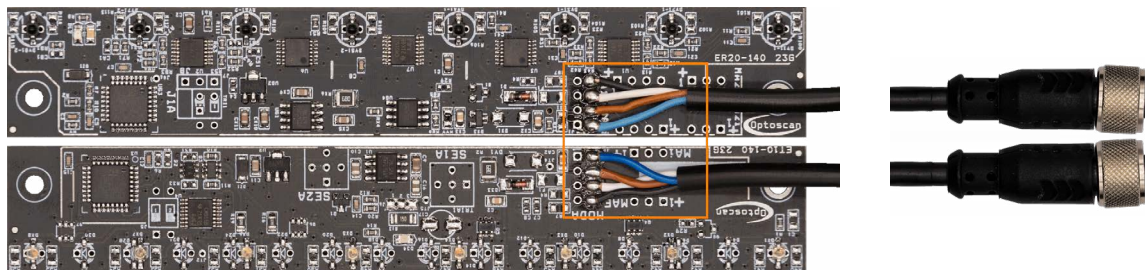


RX: MTA 4 poles +
interconnection via
MTA 3 poles

TX: MTA 3 poles

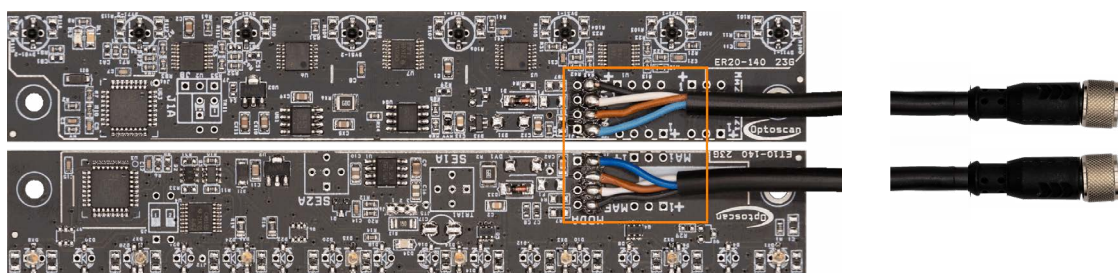
CAVM12

M12 male 4 poles cable, standard length of 30cm.



CAVM8

M8 male 4 poles cable, standard length of 30cm.



Order code generation

EOS 8-140		L1	LT	R	F	TF0	SE1a	JPi	MMPe
MODEL									
View available Models									
RANGE									
Lx									
FEATURES (optional)									
LT	Heater								
R	Tropicalization								
T	Test Input								
CODE	Coding (not compatible with TR, JA, JP)								
OPTICS									
F	Front								
S	Side								
TIMER (optional)									
TF0	Fixed 1ms Timer								
TR0.5	Adjustable 0.5s Timer (not compatible with TR, JA, JP, SL)								
TR1	Adjustable 1s Timer (not compatible with TR, JA, JP, SL)								
SENSIBILITY ADJUSTMENT									
SE1a	Front side trimmer position 1								
SE2a	Front side trimmer position 2								
SE1p	Back side trimmer position 1								
SE2p	Back side trimmer position 2								
0	Without trimmer								
OUTPUT MODE SELECTION									
JAi	Front side jumper towards photodiodes (not compatible with CODE, TR)								
JPi	Back side jumper towards photodiodes (not compatible with CODE, TR)								
JAe	Front side jumper towards outside (not compatible with CODE, TR)								
JPe	Back side jumper towards outside (not compatible with CODE, TR)								
SL	Front side DIP Switch (not compatible with TR)								
PNSE	Output mode selection via external cable								
PC	24V output when beam is interrupted								
PA	0V output when beam is interrupted								
CONNECTION									
ModA	Front side AMPMODU MOD II connector								
ModP	Back side AMPMODU MOD II connector								
MAe	RX: MTA 4 poles TX: MTA 3 poles front side towards the outside								
MAi	RX: MTA 4 poles TX: MTA 3 poles front side towards the inside								
MPe	RX: MTA 4 poles TX: MTA 3 poles back side towards the outside								
MPi	RX: MTA 4 poles TX: MTA 3 poles back side towards the inside								
MMAe	RX: MTA 4 poles TX: MTA 3 poles interconnection: MTA 3 poles front - outside								
MMAi	RX: MTA 4 poles TX: MTA 3 poles interconnection: MTA 3 poles front - inside								
MMPi	RX: MTA 4 poles TX: MTA 3 poles interconnection: MTA 3 poles back - inside								
CavM12	RX: M12 4 poles 30cm cable TX: M12 4 poles 30cm cable								
CavM8	RX: M8 4 poles 30cm cable TX: M8 4 poles 30cm cable								

The 3D file of the main configurations can be downloaded at the following link: optoscan.it/en/download

Alternatively, customized configurations can be requested.



Via Papa Giovanni XXIII, 16
20099
Sesto San Giovanni, Milano
Italia



www.optoscan.it/en



+39 02 43122115



info@optoscan.it