canfield connector
8510 Foxwood Court
Youngstown, Ohio 44514
P:(330) 758-8299 F:(330) 758-8912
www.canfieldconnector.com

OSV

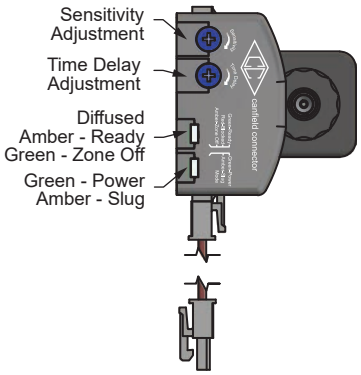
OPTICAL SENSOR VALVE
PHOTO-EYE ACCUMULATION SYSTEM

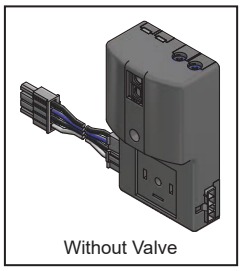
General Description

The Canfield Connector Model OSV is a fully-modular, easily-installable, optical sensor and valve combination for conveyor automation. This unit is designed for sensing objects moving through conveyor zones in order to maximize product flow while preventing product damage. By incorporating solid-state electronics and a low wattage solenoid valve, the OSV uses logic and manual inputs to reliably control a pneumatic actuator. The actuator either extends or retracts, controlling the movement of the conveyor zone. Features include adjustable sensitivity and output delay with LEDs to facilitate troubleshooting and a visual display of sensor modes. The modular design allows easy component replacement.

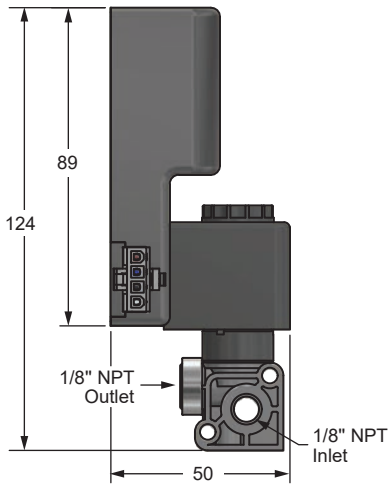
Dimensional Data

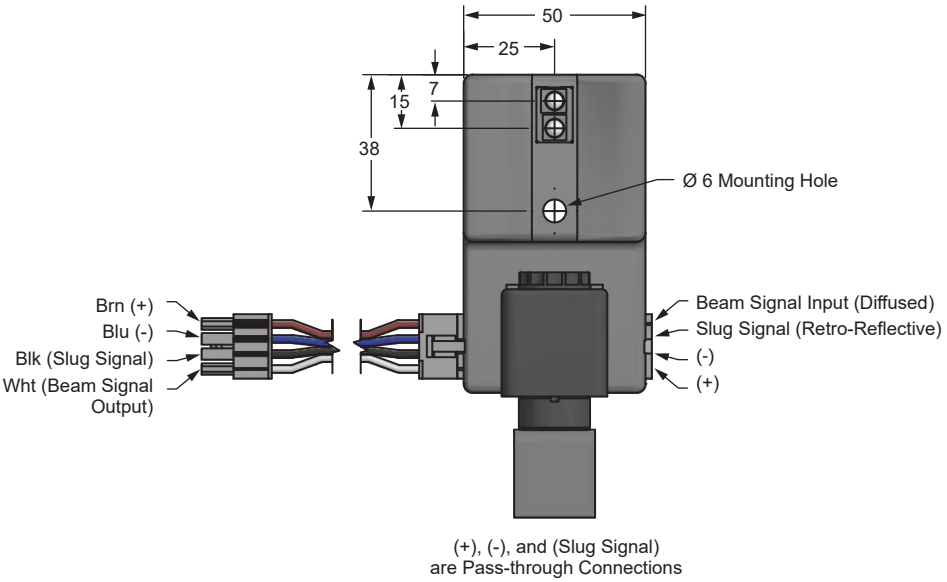
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED



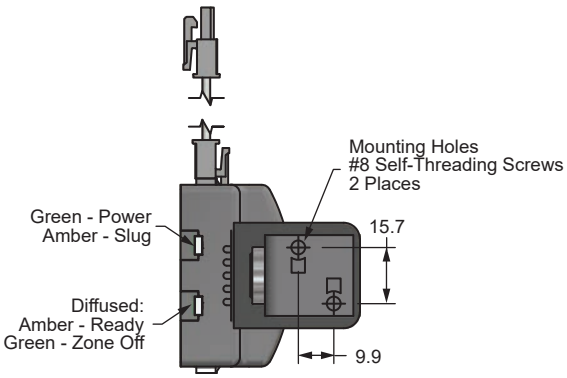








(+), (-), and (Slug Signal) are Pass-through Connections



Consult factory for available versions listed by Canadian Standards Association for use with certified electrical equipment.

A56-1287 Rev.04

Technical Data

Supply Voltage	20-28 VDC
Supply Current	65 mA with 0.9W coil energized
Slug Signal (Input)	12µA Max. per sensor sinking (NPN), (retro-reflective)
Beam Signal (Input)	5mA Max. sourcing (PNP) (diffused)
Beam Signal (Output)	200mA Max. sinking (NPN)80mA Max. Current draw
Sensing Distance	6 ft.
Valve Orifice / Pressure	1.0mm / 0 - 30 psi
Valve Time Delay	0.02 - 3 sec.
Valve Type	Normally Closed
Operating Temp.	-10° to +50°C
Materials	Housing: ABS
Environmental Protection	NEMA 1

Retro-Reflective Accumulation

Retro-Reflective Accumulation

Normally Open Operation

When Beam is CLEAR (no object detected)

1) Status LED is GREEN
2) Valve is OPEN
3) Beam Signal is ON (sinking 200mA max)

When Beam is BLOCKED (object detected)

1) Status LED turn RED for the set amount of time delay (0.02 - 3sec) then turns AMBER
2) Valve CLOSES after the set time delay
3) Beam Signal turns off immediately (no time delay)
4) If an override is needed, a GND signal to the Slug Input will OPEN all valves connected inline

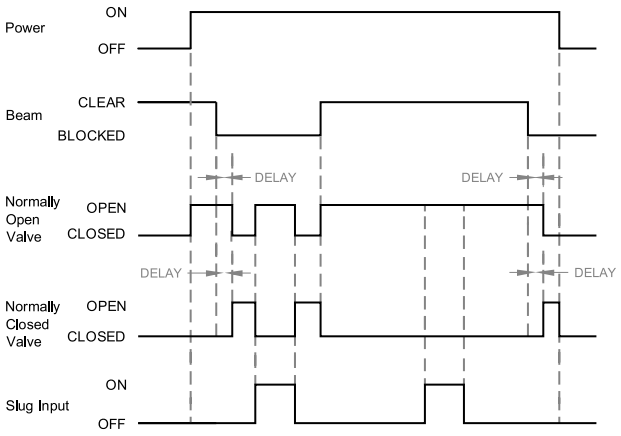
Normally Closed Operation

When Beam is CLEAR (no object detected)

1) Status LED is GREEN
2) Valve is CLOSED
3) Beam Signal is ON (sinking 200mA max)

When Beam is BLOCKED (object detected)

1) Status LED turn RED for the set amount of time delay (0.02 - 3sec) then turns AMBER
2) Valve OPENS after the set time delay
3) Beam Signal turns off immediately (no time delay)
4) If an override is needed, a GND signal to the Slug Input will CLOSE all valves connected inline



Diffused Accumulation (no time delay or slug)

Diffused Accumulation

Normally Open Operation

When Beam is CLEAR (no object detected)

1) Status LED is AMBER
2) Valve is OPEN
3) Beam Signal is ON (sinking 200mA max)

When Beam is BLOCKED (object detected)

1) Status LED is GREEN (no time delay)
2) Valve is CLOSED (no time delay)
3) Beam Signal turns off immediately (no time delay)

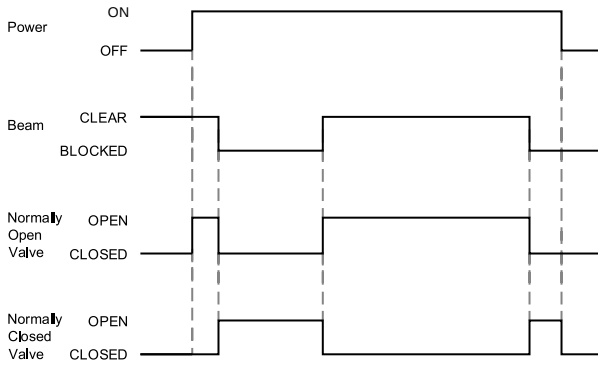
Normally Closed Operation

When Beam is CLEAR (no object detected)

1) Status LED is AMBER
2) Valve is CLOSED
3) Beam Signal is ON (sinking 200mA max)

When Beam is BLOCKED (object detected)

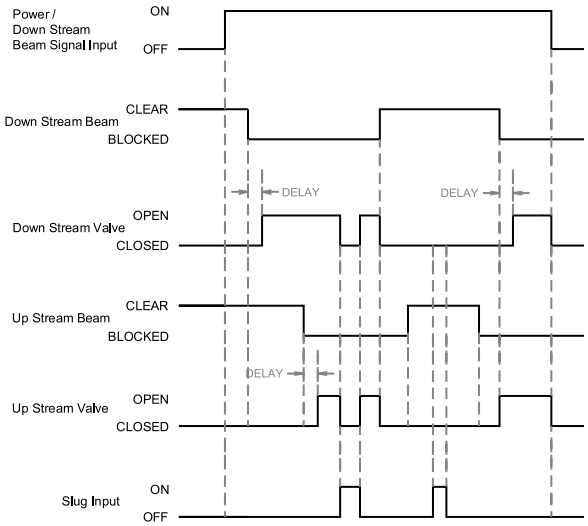
1) Status LED is GREEN (no time delay)
2) Valve is OPEN (no time delay)
3) Beam Signal turns off immediately (no time delay)



*Beam Status Signal follows the pattern as the Beam itself. When the Beam is clear the Beam Status Signal is ON.

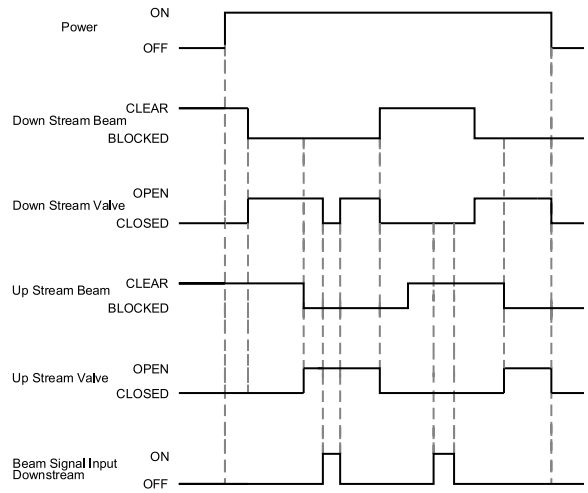
Retro-Reflective Indexing Normally Closed

Retro-Reflective Indexing
Normally Closed Operation
Downstream Sensor Beam is CLEAR (no object detected)
1) Downstream Sensor Status LED is GREEN
2) Downstream Sensor valve is CLOSED
3) Downstream Sensor Beam Signal is LOW providing a CLEAR signal to the Upstream sensor
4) Upstream Sensor valve is CLOSED no matter if its beam is CLEAR of BLOCKED
Downstream Sensor Beam is BLOCKED (object detected)
1) Downstream Sensor Status LED turns RED for the set time delay (0.02 - 3sec) then turns AMBER
2. Downstream Sensor valve OPENS after the set time delay
3) Downstream Sensor Beam Signal immediately changes HIGH (no time delay), providing a BLOCKED signal to the Upstream Sensor
4) Upstream Sensor valve is CLOSED until its Beam is BLOCKED
5) If both Downstream and Upstream sensors are BLOCKED their valves will be OPEN
6) If an override is needed, a GND signal to the Slug Input will CLOSE all valves connected inline



Diffused Indexing Normally Closed (no time delay or slug)

Diffused Indexing
Normally Closed Operation
Downstream Sensor Beam is CLEAR (no object detected)
1) Downstream Sensor status LED is AMBER
2) Downstream Sensor valve is CLOSED
3) Downstream Sensor Beam Signal is LOW, providing a CLEAR signal to the Upstream sensor
4) Upstream Sensor valve is CLOSED no matter if its beam is CLEAR of BLOCKED
Downstream Sensor Beam is BLOCKED (object detected)
1) Downstream Sensor Status LED turns GREEN (no time delay)
2) Downstream Sensor valve OPENS (no time delay)
3) Downstream Sensor Beam Signal immediately changes HIGH (no time delay), providing a BLOCKED signal to the Upstream Sensor
4) Upstream Sensor valve is CLOSED until its Beam is BLOCKED
5) If both Downstream and Upstream sensors are BLOCKED their valves will be OPEN
6) To release the LAST Downstream sensor, apply a 24VDC signal to the Beam Signal Input wire. (This only releases the last downstream sensor, no other sensors are affected)



Ordering Information

OSV ☐ ☐ - ☐ 1110 ☐ 10

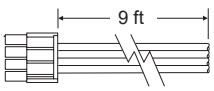
Sensing Type
1 - Retro-reflective
2 - Diffused

Zone Control
0 - Accumulation
1 - Indexing

Valve Option
0 - Without
1 - Normally Open Operation
2 - Normally Closed Operation

Zone Lengths
1 - 2 ft.
2 - 3 ft.
3 - 4 ft.
4 - 5 ft.
Additional zone lengths available

Mating Accessories



OSV Male Patch Cord
P/N: WOSV10-910

Retro Reflector
P/N: OSVR10-002

Ordering Example: OSV10-11110010

Retro-reflective, accumulation,
2 ft. zone length, without valve