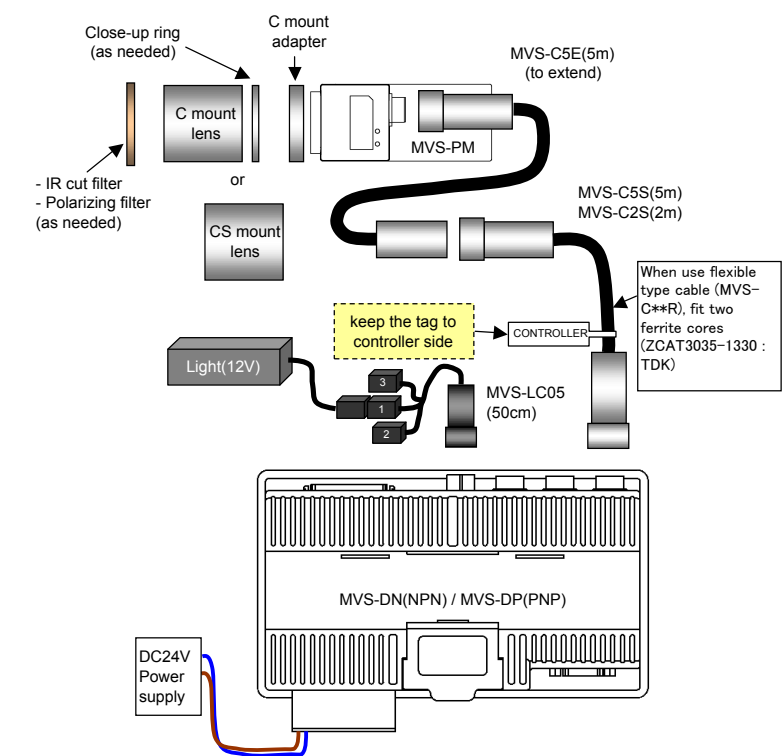| Multi camera vision sensor	**MVS-D**	OPTEX FA
Manual		

Safety Specifications
- Read the operating instructions before starting operation.
- Connection, assembly and settings only by competent technicians
- Protect the device against moisture and soiling when operating.
- No safety component in accordance with EU machine guidelines.

Proper Use
The MVS-D Multi camera vision sensor is a color vision sensor and is used for detection of optical non-contact detection of objects.
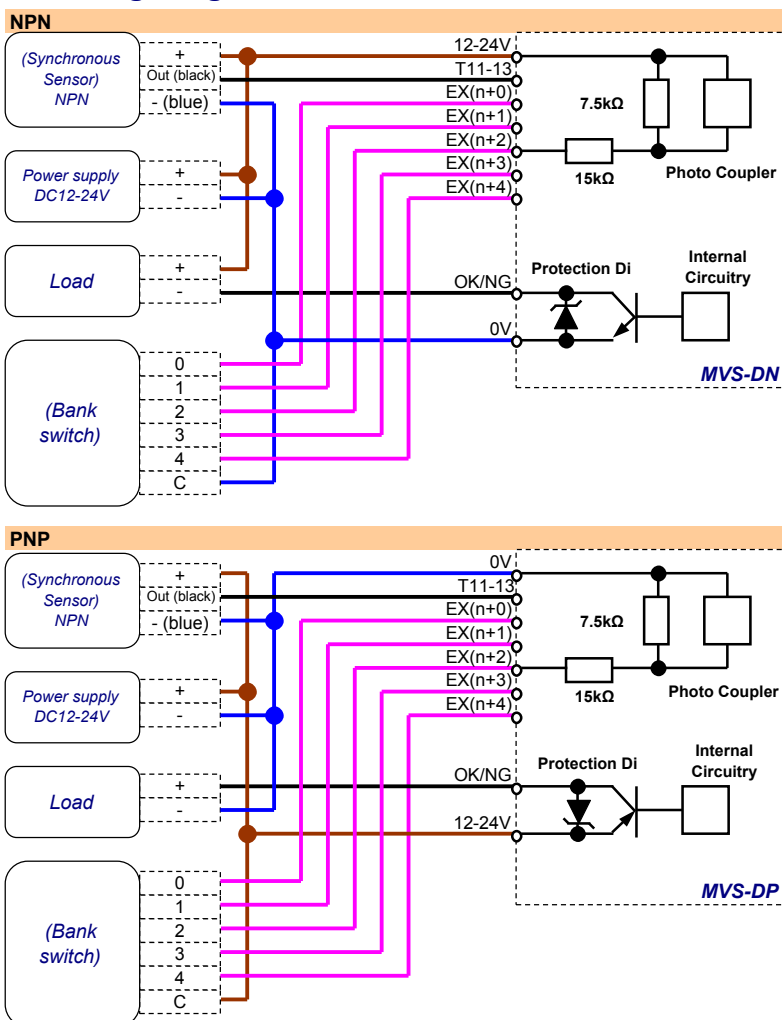
1. Specification

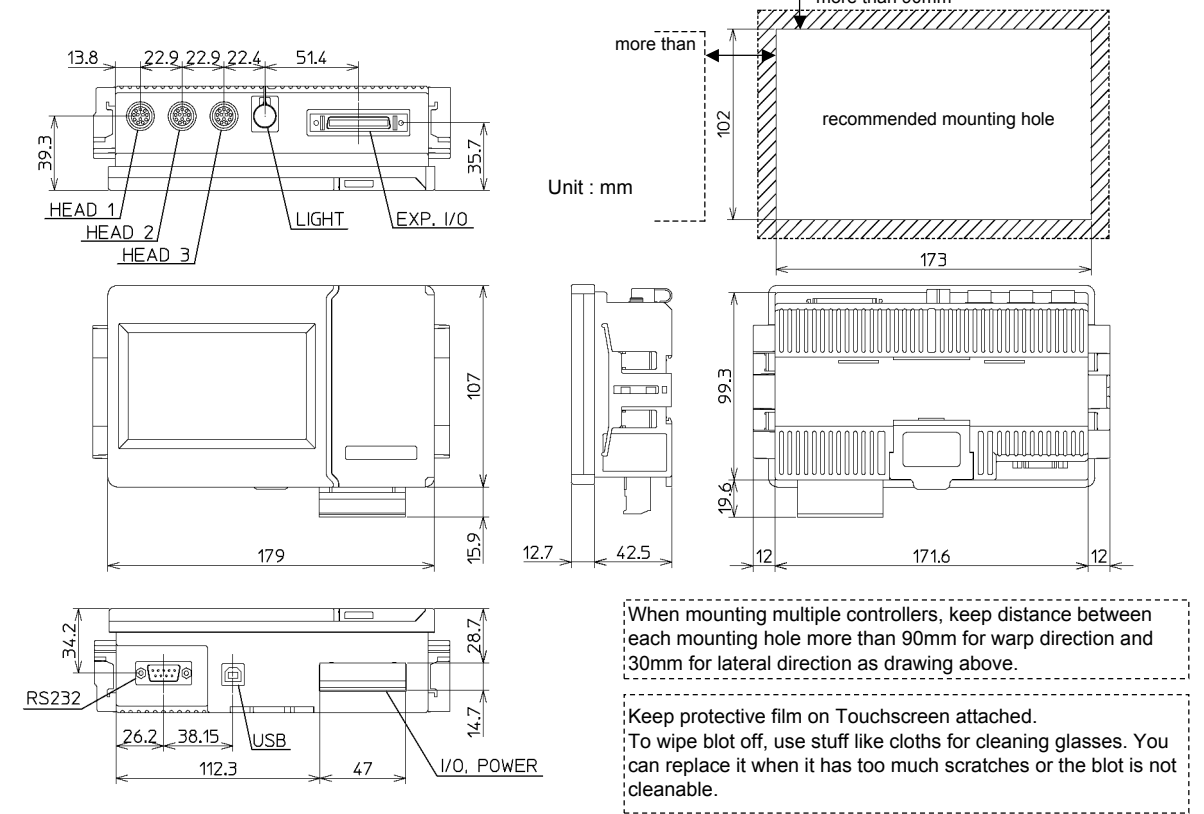| MODEL	MVS-DN/DP
Supply Voltage	DC 24V ±10% (DC 12V is possible without external Light
Power consumption	Controller : Max. 80mA / 24V DC With external light : max 1.5A (Light power consumption X 150%) + Power consumption of all camera heads
Number of camera	Max. 3 heads
Output	NPN/PNP open collector Residual voltage is less 1.0V OK, NG : 1 each for every camera head (Total: 6) max. 100mA Auxiliary output : Total 20 Pins max. 50mA
Input	Synchronous: 3, Auxiliary: 10
I/O connector	Power/OK/NG/Synchronous : Terminal block 12P Expansion I/O : IEEE1284 half pitch connector 50P
External Light out	12V PWM control (87kHz, 256steps) Out: 3, Total 24W
Communication I/F	USB1.1 (max 12Mbps) : USB standard connector RS232 (max 500kbps) : D-Sub 9P
Display, Control device	4.3" wide TFT LCD, Touchscreen, Panel SW Indicator : Power, Camera No.LED
Timer accuracy	-45sec. ~ +1min. 15sec. Per Month (Typical)
Timer backup battery	primary cell : 5 year with power off (Typical) secondary super capacitor : 7.8 year (Typical with 3 days backup
Operating Temp./Humid.	0~50°C, 35~85%/RH (Non Condensing)
Storage Temp., Humid	-20~70°C, 25~95%/RH (Non Condensing
Vibration, Shock	Vibration : 10~ 55Hz /1.5mm, Shock : 15G
Approvals	CE (EN55011 Class-A, EN61000-4-2~6), RoHS
Material	polycarbonate
Protection	IP20
Weight	Approx. 570g
Attachment	Panel mount bracket

2. System configuration

3. Dimensions

Unit : mm

When mounting multiple controllers, keep distance between each mounting hole more than 90mm for warp direction and 30mm for lateral direction as drawing above.

Keep protective film on Touchscreen attached.
To wipe blot off, use stuff like cloths for cleaning glasses. You can replace it when it has too much scratches or the blot is not cleanable.

4. Accessories

MVS-C2S	2m cable for camera head ~ controlle
MVS-C5S	5m cable for camera head ~ controlle
MVS-C5E	5m cable for camera head ~ controller for extensio
MVS-C2SR	2m cable for camera head ~ controller (flexible type
MVS-C5SR	5m cable for camera head ~ controller (flexible type
MVS-C5ER	5m cable for camera head ~ controller for extension (flexible typ
MVS-C5W	5m cable for camera head ~ controller with wiring for light (need MVS-LC05)
MVS-LC05	50cm cable for light
MVS-TP	Protective film for Touchscreen (10 pcs

Other accessories: C/CS mount lens, Light unit, Polarizing filter, e.t.c

5. I/O Pin assignment

Terminal block 12P

No.	Name	I/O	Details
1	12-24V		+ side of Power supply (DC12-24V), Use DC24 in case using Light output.
2	0V		- side of Power supply (DC12-24V
3	OK1	Out	Output of judgment result of camera head No.1, It's ON when the result is OK.
4	NG1	Out	Output of judgment result of camera head No.1, It's ON when the result is NG.
5	T11	In	Trigger signal for capturing. Connect sensor or PLC for synchronization (Originally, it's synchronous trigger for head No.1 though, can assign as external teaching input
6	OK2	Out	Output of judgment result of camera head No.2, It's ON when the result is OK.
7	NG2	Out	Output of judgment result of camera head No.2, It's ON when the result is NG.
8	T12	In	Trigger signal for capturing. Connect sensor or PLC for synchronization (Originally, it's synchronous trigger for head No.2 though, can assign as external teaching input
9	OK3	Out	Output of judgment result of camera head No.3, It's ON when the result is OK.
10	NG3	Out	Output of judgment result of camera head No.3, It's ON when the result is NG.
11	T13	In	Trigger signal for capturing. Connect sensor or PLC for synchronization (Originally, it's synchronous trigger for head No.3 though, can assign as external teaching input
12	0V		Connected to the pin No.2 internally

6. Bank table

Bank No.	Expansive input					Parity
	n	n+1	n+2	n+3	n+4	
0	OFF	OFF	OFF	OFF	OFF	ON
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	ON
4	OFF	OFF	ON	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	ON
6	OFF	ON	ON	OFF	OFF	ON
7	ON	ON	ON	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF
9	ON	OFF	OFF	ON	OFF	ON
10	OFF	ON	OFF	ON	OFF	ON
11	ON	ON	OFF	ON	OFF	OFF
12	OFF	OFF	ON	ON	OFF	ON
13	ON	OFF	ON	ON	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF
15	ON	ON	ON	ON	OFF	ON
16	OFF	OFF	OFF	OFF	ON	OFF
17	ON	OFF	OFF	OFF	ON	ON
18	OFF	ON	OFF	OFF	ON	ON
19	ON	ON	OFF	OFF	ON	OFF
20	OFF	OFF	ON	OFF	ON	ON
21	ON	OFF	ON	OFF	ON	OFF
22	OFF	ON	ON	OFF	ON	OFF
23	ON	ON	ON	OFF	ON	ON
24	OFF	OFF	OFF	ON	ON	ON
25	ON	OFF	OFF	ON	ON	OFF
26	OFF	ON	OFF	ON	ON	OFF
27	ON	ON	OFF	ON	ON	ON
28	OFF	OFF	ON	ON	ON	OFF
29	ON	OFF	ON	ON	ON	ON
30	OFF	ON	ON	ON	ON	ON
31	ON	ON	ON	ON	ON	OFF

Parity calculation: Inverse of XOR (bit of n~(n+4)), (When the number of ON bits is odd, the parity is OFF)

Expansive I/O IEEE1284 half pitch connector 50P (Pins with same name in I/O connector 12P are connected internally

No.	Name	I/O	Details	No.	Name	I/O	Details
1	OK1	Out	Output of judgment result of camera head No.1, It's ON when the result is OK.	26	EY1	Out	An output that shows the controller is in operation, Coordinate, individual inspection result of window, e.t.c. Output No. and number of pins are set by each camera head setting.
2	NG1	Out	Output of judgment result of camera head No.1, It's ON when the result is NG.	27	EY2		
3	T11	In	Trigger signal for capturing for head No.1. Connect sensor or PLC for synchronization	28	EY3		
4	OK2	Out	Output of judgment result of camera head No.1, It's ON when the result is OK.	29	EY4		
5	NG2	Out	Output of judgment result of camera head No.1, It's ON when the result is NG.	30	EY5		
6	T12	In	Trigger signal for capturing for head No.1. Connect sensor or PLC for synchronization	31	EY6		
7	OK3	Out	Output of judgment result of camera head No.1, It's ON when the result is OK.	32	EY7		
8	NG3	Out	Output of judgment result of camera head No.1, It's ON when the result is NG.	33	EY8		
9	T13	In	Trigger signal for capturing for head No.1. Connect sensor or PLC for synchronization	34	EY9		
10	GND1		Connected to 0V internally. Can be used as common of NPN input and PNP output.	35	EY10		
11	AV1	Video	Video output (NTSC/PAL) AV1: video signal, AI1: GND ** Available only with MVS-DN-V, MVS-DP-V	36	EY11		
12	AI1			37	EY12		
13	AV2	---	Reserved! Don't connect anything.	38	EY13		
14	AI2			39	EY14		
15	GND2		Connected to 0V internally. Can be used as common of NPN input and PNP output.	40	EY15		
16	EX1	In	Can be used as Bank Switch input, external teaching, forcible capture trigger. Input No. and number of pins are set by each camera head setting.	41	EY16		
17	EX2			42	EY17		
18	EX3			43	EY18		
19	EX4			44	EY19		
20	EX5			45	EY20		
21	EX6			46	GND3		Same as GND1 and GND2
22	EX7			47	GND4		
23	EX8			48	VCC1		Connected to 24V internally. Can be used as common of PNP input and NPN output.
24	EX9			49	VCC2		
25	EX10			50	VCC3		

RS232 D-Sub 9P Male

No.	Name	T/R
2	TXD	Tns.
3	RXD	Rec.
5	GND	

1,4,6,7,8, and 9 pins are N.C. Connect same pins to PC.

7. Wiring Diagram