EyeCheck 9xx and 1xxx

Hardware Manual

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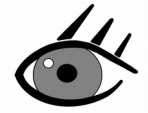

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* EVT in short form means the EVT GmbH and or the EVT AG.

1 Installation Instructions

1.1. Mechanical Installation

To ensure maximum accuracy of detection, the EyeCheck Vision-System should be protected from vibration.

Secure the supply and I/O cables with cable binders to prevent crushing of slipping.

Select a posistion for the EyeCheck Vision-System in which interfering factors such as slight differences in the position of the object or variations in illumination have little or no effect.

Screw the EyeCheck Vision-System onto the mounting clamp (supplied with the unit) and then onto a suitable object.

Use only the mounting clamp MK 45 (no. 543-1100), MK 45 L (no. 543-1121) or the mounting hinge MG2A (no. 543-11023).

Arrangement for dark-field illumination
- for the prevention of direct reflections and Accentuation of edges etc.

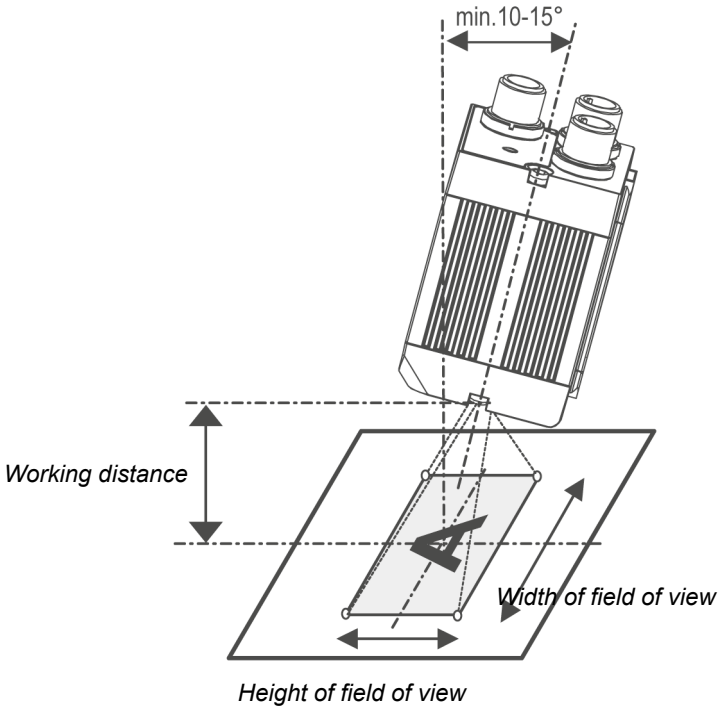


Fig. 1

Arrangement for bright-field illumination
- for transmitted light/ measuring tasks or for the accentuation of highly-reflective objects.

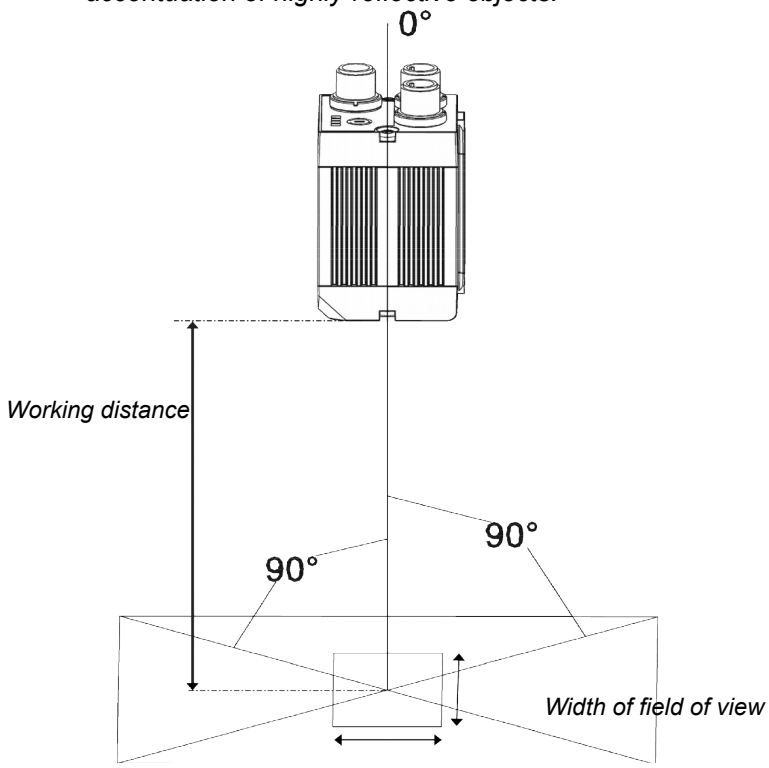


Fig. 2

Observe the object clearance given in the table Field of View / Working Distance.
To avoid interfering reflection from the detection object, align the Eyesight Vision-System at an angle of approx. 10°-15° with reference to the optical axis (fig. 1).

Fine adjustment
Important: Fine adjustment of the Eyesight Vision-System should not be carried out until after electrical connection and start-up (PC software installation).

1.2. Electrical Installation

The electrical installation of the EyeCheck Vision-System must be carried out by a qualified electrician.

When installing the EyeCheck Vision-System, disconnect all electrical components from the power supply.

When the unit is being used in a network, ensure that the network address (IP address) of the EyeCheck Vision-System set by the manufacturer is free and is not in use for any other unit connected to the system.

If necessary, re-set the IP address of the EyeCheck Vision-System. When the EyeCheck Vision-System is in use, the protective caps supplied must be pushed onto the M12 sockets (data and LAN) which are not in use. Failure to do this may cause malfunction.

1.2.1. Connection Possibilities

For stand-alone operations (independent of PC / PLC) only connection 24V DC is required after start-up.

For electrical installation, connect wires as follows:

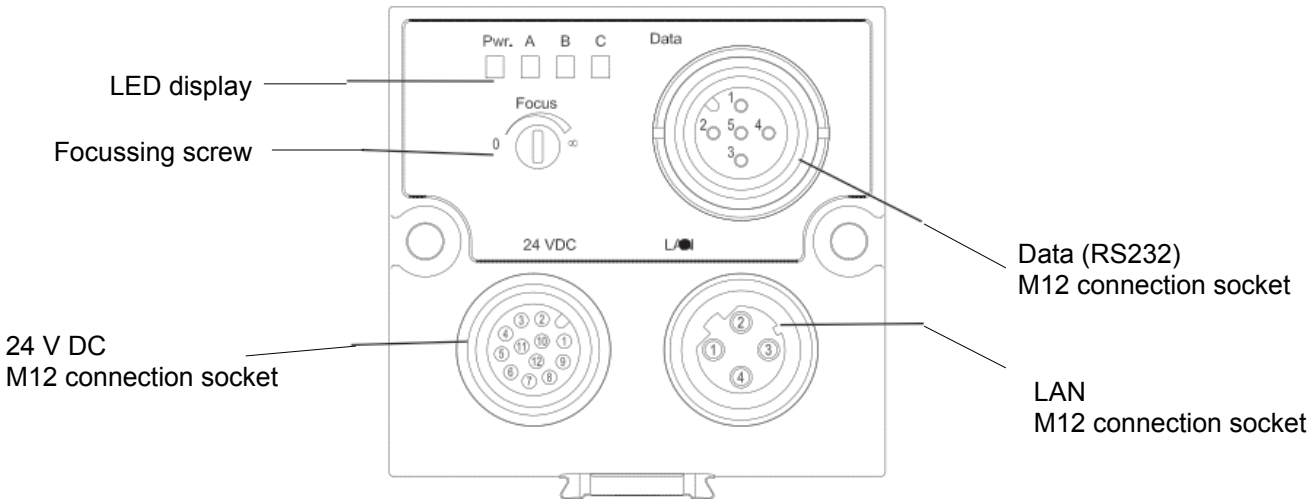


Fig. 3

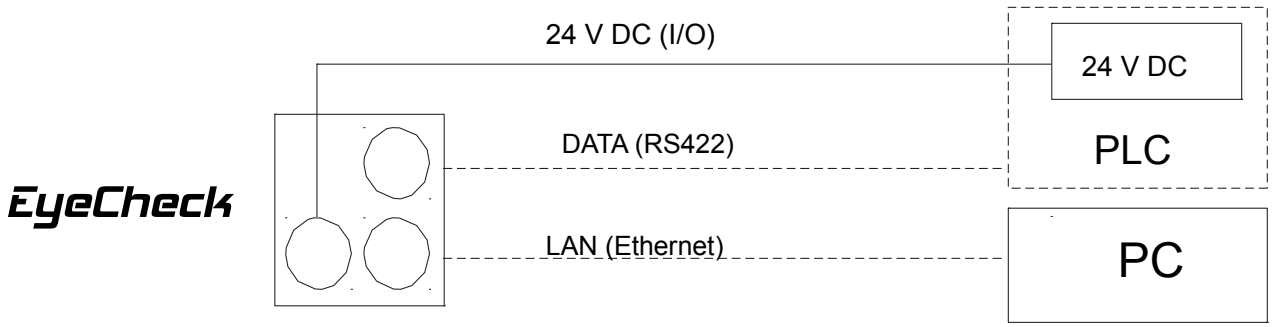


Fig. 4

1.2.1.1. LED Display

Name	Color	Meaning
Pwr.	green	Operating Voltage
A	yellow	OUT 2
B	yellow	IN 3
C	yellow	OUT 3

Table 1

1.2.1.2. Focussing Screw

Focussing screw to adjust focus.

1.2.1.3. 24 V DC Connection

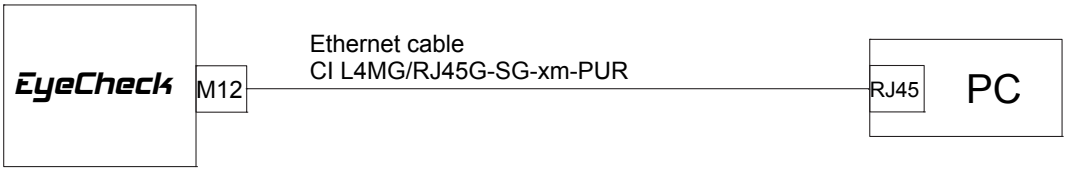
M12 Connection socket for 24 V DC voltage supply and digital I/O.
For the exact plug connection see table 2.

1.2.1.4. LAN Connection

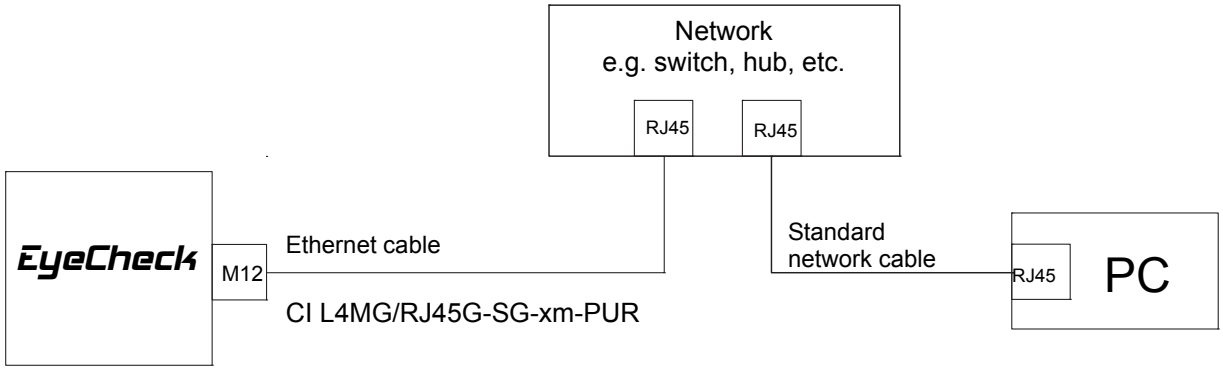
M12 Connection socket for Ethernet connection.
For the exact plug connection see table 3.

Use only the correct network cables.

Direct connection of the Eyesight Vision-System to a PC (recommended):



Connection of the EyeCheck Vision-System to a PC via a network:



1.2.1.5. Data (RS422) Connection

M12 Connection socket for DATA serial interface, RS422.

In *View → Application parameters → System → Connection settings (C OM)* the serial settings can be changed.

1.2.1.6. Plug Connections

PIN assignment, connection 24 V DC

PIN	Color	Use
1	BN	+ Ub (24V DC)
2	BU	GND
3	WH	IN (external trigger)
4	GN	OUT 0
5	PK	IN 1
6	YE	IN 2
7	BK	IN 3, LED C
8	GY	OUT 3, LED C
9	RD	OUT (external illumination)
10	VT	IN 0
11	GYPK	OUT 1
12	RDBU	OUT 2 (ejector, max. 100mA), LED A

Table 2

Use only shielded cables.
Connect large area of shield to ground.

PIN assignment, connection LAN

(M12) 4 pin	Color	PIN (RJ45)	Cross-over
1	yellow	3	RxD+
2	white	1	TxD+
3	orange	6	RxD-
4	blue	2	TxD-

Table 3

PIN assignment DATA

PIN	Color	Use	Use
		RS422	RS232
1	white	RxD+	NC
2	brown	RxD-	Rx
3	black	TxD+	Tx
4	blue	TxD-	NC
5	grey	GND	GND

Table 4

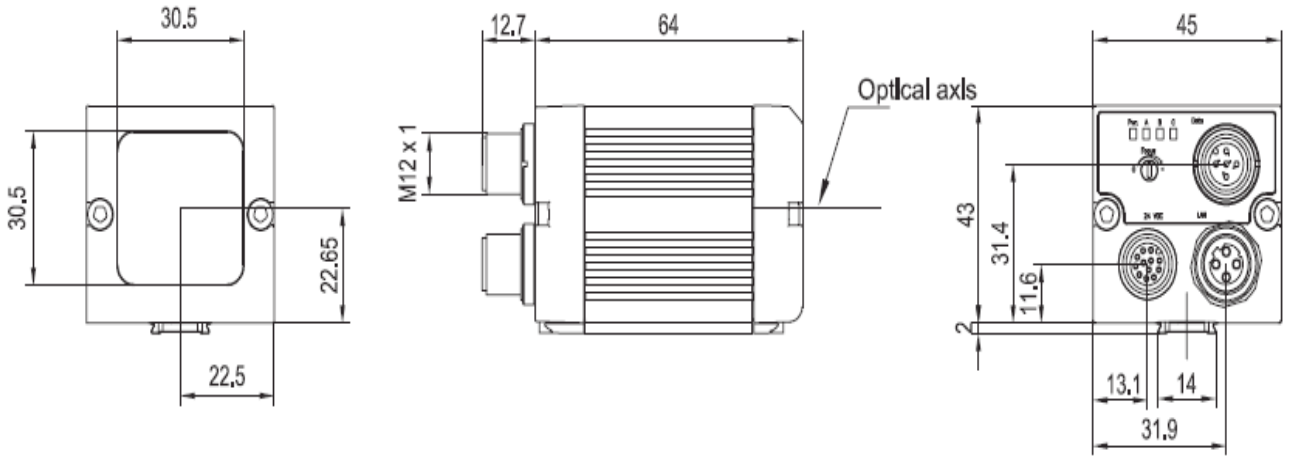
2 Technical Data

Electrical Data			
Operating voltage U_B	24 V DC, -25% / +10%		
Residual ripple	< 5 Vss		
Current consumption (no I/O)	≤ 200 mA		
All inputs	PNP High > U_{B-} 1 V, Low < 3 V		
Input resistance	> 20 kOhm		
Outputs	PNP		
Max. output current (per output)	50 mA, Ejector (Pin 12 / BDRU) 100 mA		
Short-circuit protection (all outputs)	yes		
Inductive load	typ.: relay 17K / 2H, pneumatic valve 1.4 K / 190 mH		
Protection against inverse connection	yes		
Interfaces EyeCheck 9xx	Ethernet (LAN), RS422		
Interfaces EyeCheck 1xxx	Ethernet (LAN), RS422		
Readiness delay	Typ. 13 s after power on		
Optical Data			
Pixel number, technology	EyeCheck 9xx … CMOS, mono / color		
	EyeCheck 1xxx … CMOS, mono / color		
Integrated scan illumination	8 LEDs (except C-Mount)		
Integrated lens, focal length	6 or 12 mm, adjustable focus		
Sensortype	EC9xx	EC9xx	EC1xxx
Lens (ajustable to infinity)	6	12	12
Min. scan distance	6	30	30
Min. field of view X x Y	5 x 4	8 x 6	16 x 13
Mechanical Data			
Length x width x height	65 x 45 x 45 mm (without plug)		
Weight	approx. 160 g		
Vibration / shock	EN 60947-5-2		
Ambient operating temperature	0° C … 50° C (80% humidity, non-condensing)		
Storage temperature	-20° C … 60° C (80% humidity, non-condensing)		
Protective system	IP 65 / 67		
Plug connection	24V DC and I/O M12 12-polig, LAN M12 4-pin, Daten M12 5-pin		
Housing material	aluminium, plastic		

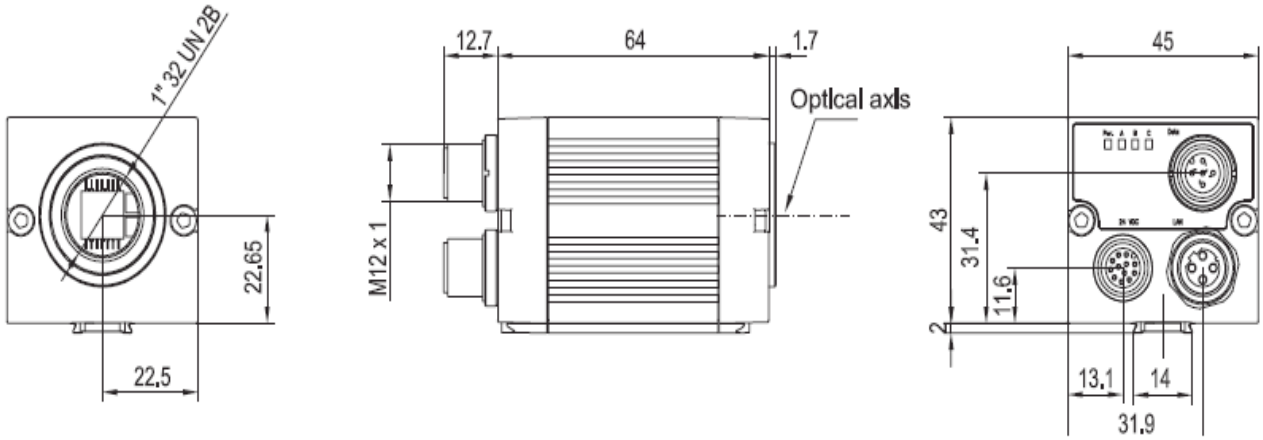
Use only shielded cables. Connect large area of shield to ground.

3 Dimensional Drawings

EyeCheck 9xx and 1xxx



EyeCheck 9xx and 1xxx C-Mount



Mounting clamp MK 45 (supplied with EyeCheck Vision-System)