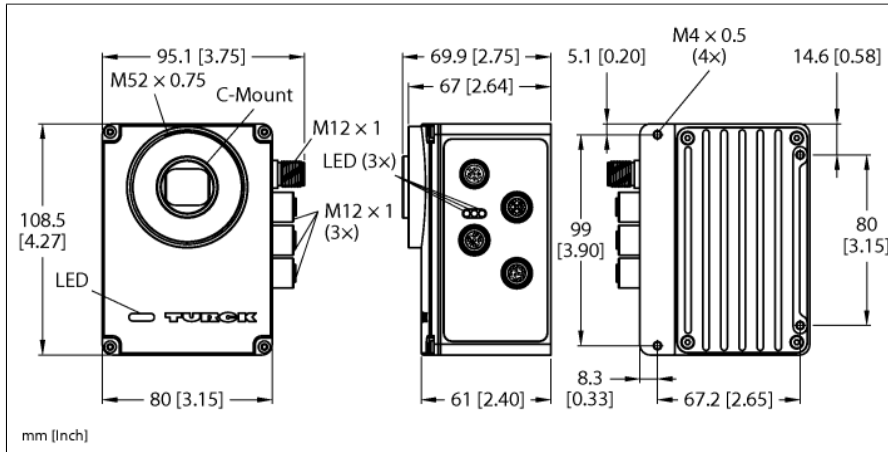


Image Processing Camera-Based AI Solution Autonomously Builds Transferable Neural Networks TIV12MG-Q110N



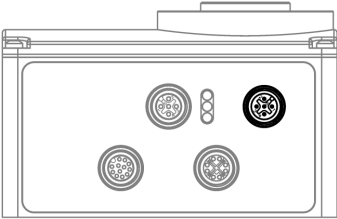
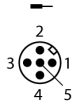
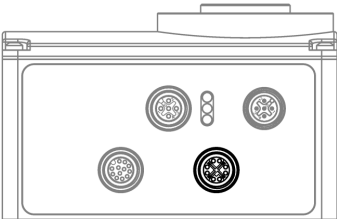
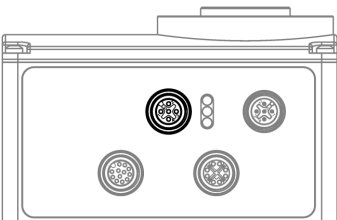
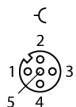
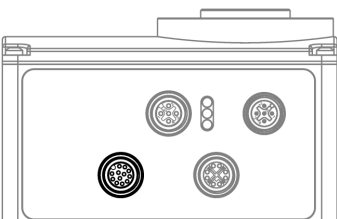
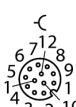
Type	TIV12MG-Q110N
ID	100048288
Function	Barcode reader - smart camera
Image sensor	1/1.1" CMOS, monochrome, global shutter
Resolution	4128 x 3008 pixels
Pixel size	2.74 µm
Frame rate	39 fps
Internal memory	240000 MB
Processor	NVIDIA Jetson Nano 4 GB, Quad core 1.4 GHz
Add-on memory	1 x SD/MMC memory card
Operating system	Linux
Lens	C-Mount
Operating voltage U _s	22...26 VDC
Admissible range	Max. 4 A for lighting, max. 6 A total current
Short-circuit protection	yes
Reverse polarity protection	yes
Communication protocol	TCP/IP RFC1006
Transmission type	Full duplex
Output function	Input/output programmable, 4 x programmable push/pull, optically isolated
Electrical isolation	GPIOs galvanically isolated from Vss
Input function	Trigger in
Power on display	LED, Green
Switching state	LED, Yellow
Error indication	LED, red

- TAS vision monitor for basic settings and visualization
- Barcode reader
- Neural network for local teach-in of image differences
- 12-MP global shutter image sensor
- Processor: NVIDIA Jetson Nano 4 GB
- 4 x GPIO, configurable via TAS/web browser, push/pull or potential-free selectable via control input ISO Vcc
- External trigger input
- Connection for external lighting
- Communication protocol Ethernet TCP/IP and RFC1006
- Protection class IP67 with LC-Q110 lens cover (sold separately)
- C-mount lens (sold separately)

Functional principle

The AI-vision smart camera has a high-resolution CMOS image sensor and combines the ease of use and configuration of an image sensor with the powerful complexity and multifunctionality of an image processing system. The TAS vision monitor allows you to configure basic settings after the camera is connected. The inspection is parameterized exclusively via the neural network, meaning that the limits are taught in via image capture (at least 10 good and 10 bad scenarios) without any programming.

Design	Rectangular, Q110
Housing material	Aluminium, AL
Housing cooling	Passive
Electrical connection	Connector, M12 × 1, 12-wire
Ambient temperature	-20...+40 °C
Storage temperature	-40...+70 °C
Relative humidity	25...75%
Protection class	IP67
	With screwed lens
Approvals	CE, cULus

		Power supply M12 × 1 male connector, 5-pin, A-coded  1 = 24 VDC 2 = 24 VDC 3 = GND 4 = GND 5 = n.c.
		Ethernet M12 × 1 female connector, 8-pin, X-coded  1 = TxD1 + 2 = TxD1 - 3 = RxD2 + 4 = RxD2 - 5 = BiD4 + 6 = BiD4 - 7 = BiD3 - 8 = BiD3 +
	Pin 1: 24 VDC can be switched on/off via software Pin 2: slow trigger input Pin 4: fast trigger input, falling edge Pin 5: connect the ground to the signal processor, e.g. PLC	Input M12 × 1 female connector, 5-pin, A-coded  1 = 24 VDC OUT 2 = IN 2 3 = GND 4 = IN 1 5 = ISO GND
	Pin 1, 2: 24-VDC supply for connected lighting Pin 6: 24 VDC can be switched on/off via software Pin 7: 24-VDC control input, changeover of the outputs from push/pull to potential-free contacts Pin 8: GPIO 1 (default) — system status Pin 9: GPIO 2 (default) — feedback, inspection OK Pin 10: GPIO 3 (default) — system status Pin 11: GPIO 4 (default) — feedback, inspection NOK	Output M12 × 1 female connector, 12-pin, A-coded  1 = 24V OUT 2 = 24V OUT 3 = Strobe/Flash 4 = GND 5 = GND 6 = 24V OUT 7 = ISO Vcc 8 = GPIO 1 9 = GPIO 2 10 = GPIO 3 11 = GPIO 4 12 = GND

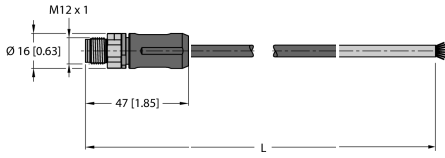
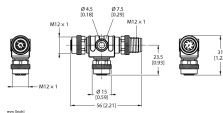
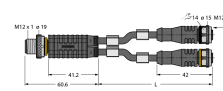
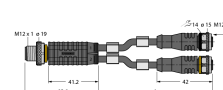
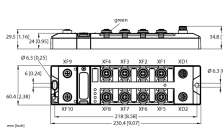
Accessories

Type code	Ident no.		Dimension drawing
MW-Q110-R	100048562	Mounting bracket, made of stainless steel, angled (90 °), for Q110	
MW-Q110-S	100048564	Mounting bracket, made of stainless steel, straight, for Q110	
LC-Q110-25	100048565	Protective housing for camera optics, made of metal with clear glass window, M52 × 0.75 female thread, for mounting on Q110 camera housings, for lenses with up to 25-mm focus	
LC-Q110-35	100048566	Protective housing for camera optics, made of metal with clear glass window, M52 × 0.75 female thread, for mounting on Q110 camera housings, for lenses with up to 35-mm focus	
RKC4.5T-2/TEL	6625016	Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval	
WKC4.5T-2/TEL	6625028	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; cULus approval	

Accessories

Type code	Ident no.		Dimension drawing
RKS4.5T-2/TEL	6626361	Connection cable, M12 female connector, straight, 5-pin, cable length: 2 m, jacket material: PVC, black; shielded; cULus approval	
WKS4.5T-2/TEL	6626364	Connection cable, M12 female connector, angled, 5-pin, cable length: 2 m, jacket material: PVC, black; shielded; cULus approval	
RKS4.5T-2-RSS4.5T/TEL	6626388	Extension cable, M12 female connector, straight, 5-pin to M12 male connector, straight, 5-pin; cable length: 2 m, jacket material: PVC, black; shielded; cULus approval	
RSS8T-2/TXL	6625464	Connection cable, M12 male connector, straight, 8-pin, cable length: 2 m, jacket material: PUR, black; shielded; cULus approval	
RKS8T-0.3-RSS8T/TEL	6625470	Extension cable, M12 female connector, straight, 8-pin to M12 male connector, straight, 8-pin; cable length: 0.3 m, jacket material: PVC, black; shielded; cULus approval	
WKS8T-0.5-WSS8T/TXL	6629117	Extension cable, M12 female connector, angled, 8-pin to M12 male connector, angled, 8-pin; cable length: 0.5 m, jacket material: PVC, black; shielded; cULus approval	

Accessories

Type code	Ident no.		Dimension drawing
RSSX-8814-2M	100036442	Connection cable for Industrial Ethernet, M12 male connector, X-coded, straight, cable length: 2 m, jacket material: PUR, green	
VT2-FKM8-FKM8-FSM8	6930575	T-splitter, M12, 8-pin, wired in parallel; female connector — female connector — male connector	
VBRS12-RKC4.4T-RKC8T-0.15/0.15/TXL4300	6636536	2-port junction systems — Y-splitter with cable, M12 male connector, straight, 12-pin — 2 × M12 female connector, straight, 4-pin and 8-pin, cable length: 0.15 m, jacket material: PUR, black	
VBRS8-RKC4.5T-RKC8T-0.15/0.15/TXL4400	6636537	2-port junction systems — Y-splitter with cable, M12 male connector, straight, 8-pin — 2 × M12 female connector, straight, 5-pin and 8-pin, cable length: 0.15 m, jacket material: PUR, black	
OPT-CDP0828	100052370	Lens, C-mount, 8-mm focal distance	
OPT-CDP1228	100052371	Lens, C-mount, 12-mm focal distance	
OPT-CDP1628	100052372	Lens, C-mount, 16-mm focal distance	
OPT-CDP2528	100052373	Lens, C-mount, 25-mm focal distance	
OPT-CDP3528	100052374	Lens, C-mount, 35-mm focal distance	
OPT-CDP5028	100052375	Lens, C-mount, 50-mm focal distance	
TBEN-LL-SE-M2	100004427	Managed Ethernet switch, 8 × 100-Mbit ports, 2 × 1-Gbit ports	

Accessories

Type code	Ident no.		Dimension drawing
TBEN-LL_switch_andreas	andreas_TBEN-LL_switch	Managed Ethernet Switch8 x 100 Mbit Ports, 2 x 1 Gbit Ports	