GATEKEEPER 410X4 and 1250X4

Precision, speed and quality

Equipped with neural processing power the Gatekeeper 410X4 and 1250X4 multitask. They perform complex video analysis and communicate results to third party systems simultaneously, without the need for extra server capacity.

AVUTEC's camera systems are specialized in ANPR, providing precise license plate recognition. They are capable of determining the direction of a vehicle's movement. Additionally, they offer advanced video analysis for expanded functionality.

The IR-sensitive sensor, IR LEDs, and daylight filter ensure high-accuracy LPR performance in all weather and lighting conditions. The onboard color sensor provides a detailed overview, while the neural processing unit guarantees both speed and precision.

All image processing is done on device. Transmitting just the detection results as metadata ensures low bandwidth usage. Recognition continues even if Ethernet fails.

Features

- Embedded ANPR engine to read number plates
- AI boosted to run multiple video analysis algorithms in parallel
- PoE+ enabled to simplify cabling and deployment
- IR corrected varifocal lens (2-30 meters) for flexible positioning
- IR LED illumination for day and night operation
- IP66 rated enclosure for performance in all weather conditions and harsh environments
- Toolset for full remote configuration and monitoring.

Benefits

Freedom of projection - The varifocal lens, the onboard LED illumination and PoE+ ensure freedom of projection and simplify positioning. The large ANPR distance, a 40° recognition angle and a versatile ANPR engine deliver unprecedented flexibility and cost effective installations.

Built-in interfaces and I/O ports - The Wiegand interface enables connectivity with any access control system or door controller. Onboard I/O terminals operate any gate, indicator or electronic peripheral.

Speed of recognition - Their on board versatile, high speed and accurate ANPR engine makes both models suited to capture license plates of free-flow and stop-and-go traffic

Integration and connectivity - The provided database-, FTP- and REST API module meet most integration demands. The scripting engine, specialised connector modules, the AVUTEC integration service and a developers SDK ensure connectivity and integration with any other system or interface.

FACT SHEET TECHNICAL SPECIFICATIONS

IMAGING		
Sensor 1		
GK_410X4 and GK_1250X4	1920x1200 resolution, 60 fps, sequencing, monochrome, IR sensitive	
Varifocal lens GK_410X4	4 – 9 mm. iris, 2 - 12 meters*	max lane width 6 meters*
Varifocal lens GK_1250X4	10 – 32 mm. iris, 5 - 30 meters*	max lane width 6 meters*
Sensor 2		
All models	Low light sensitive camera 1920 x 1080 resolution, 60 fps	
Fixed lens GK_410X4	6mm	
Fixed lens GK_1250X4	12mm	
Daylight filter	850 nM IR band pass filter, small transparent eye (context camera)	

* Please note that the suggested conditions may vary depending on the specific circumstances under which the GK_410X4 and GK_1250X4 are installed. It is recommended to refer to the range charts for the GK_410X4 and GK_1250X4 to ascertain the advised operating conditions for these models.

ILLUMINATION	
Wavelength	850nm
Illumination mode	synchronised with sensor 1
Illumination angle GK_410X4	90°
Illumination angle GK_1250X4	20°
Variable intensity	RAL9002 / costum colors possible
Bracket footprint	Conform WBOVA2, Videotec standard

ENCLOSURE	
Measurements	305 x 192 x 72 mm (l x w x h)
Weight	2.43 kg
Material	Aluminium zinc alloy
Protection level	IP66
Color	RAL9002 / costum colors possible
Suncap	Cap to protect against direct sun light and rain
Bracket footprint	Conform WBOVA2, Videotec standard

POWER	
Power supply	PoE+ (Plus), IEEE 802.3at, 25 Watts minimal at RJ-45 socket
Typical power consumption	17 W

PROCESSING AND I/O	
Processing units	• Embedded quad core 2.0GHz, 64-bit CPU • Multi-core NPU
Inputs/Outputs	2 x NOC / NCC potential free with Ext1, 6 x NOC / NCC with Ext2 I/O mod.
Communication port	1 x 10/100/1000 Base-T Ethernet port, Wiegand 5 Volt-level with GK_ext1
Video connectivity protocols	ONVIF profile S, M, RTSP

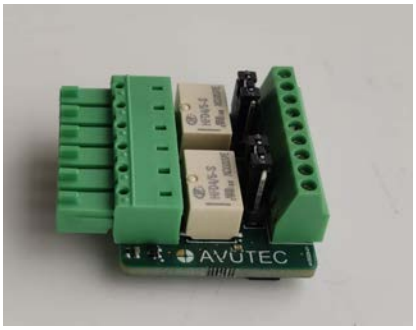
OPERATING CONDITIONS	
Max lane width	max 6 meters*
IR sensor	• 410X4: 0 - 100 km/h • 1250X4: 0 – 180 km/hr.
Operating temperature range	-18°C to 45°C environment
Max horizontal recognition angle	40°
Max vertical recognition angle	40°
Max tilting angle	10°

* Ask for the range charts to make an accurate projection

DEEP LEARNING AND AI	
ANPR/LPR	Automated Number / License Plate Recognition
Detection, tracking, counting	Detection, tracking and counting of people, vehicles and other objects
Custom trained module	Neural networks or computer vision routines trained/developed by AVUTECs deep learning development service

FACT SHEET TECHNICAL SPECIFICATIONS

IO EXTENDER for 410X4 and 1250X4

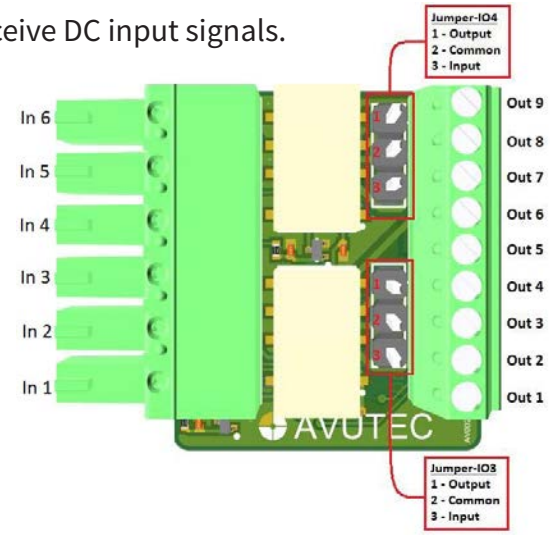


The IO extender is a level shifter and relay-board in one, that is used as an extender of the IO pins in the back of all Gatekeeper-X models. It is used to generate a Wiegand signal and communicate with electronic devices via relais.

Wiegand
The IO pins as they come in the back of the Gatekeeper have an output voltage of 3.3V. The IO extender shifts the Wiegand signal to 5V.

Operating a barrier directly
To open a barrier directly the IO extender has two electronic relays to switch a voltage to open a gate. Relay A and Relay B can be used to operate two individual barriers.

Receiving input
The IO extender can be used to receive DC input signals.



Pinout description output connector of the I/O extender		
Pin number	**Signal**	**Description**
Out 1	GND	
Out 2	D1	
Out 3	D0	
Out 4	Relay B NC	
Out 5	Relay B COM	
Out 6	Relay B NO	
Out 7	Relay A NC	
Out 8	Relay A COM	Switch IO4 jumper for input mode
Out 9	Relay A NO	

Jumper IO4 of the I/O extender		
Pin number	**Signal**	**Description**
1	Output	Connect jumper between this pin and Common to set IO4 to output mode
2	Common	
3	Input	Connect jumper between this pin and Common to set IO4 to input mode

MOUNTING FLEXIBILITY for 410X4 and 1250X4

Horizontal and vertical angles from the Gatekeeper to the license plate

For the best performance it is advised to keep the horizontal and vertical angles as small as possible. Stated angles are maximum angles. For the best recognition each installation must be examined with care. Maximum angles are set according to the LED beam. Angles can be bigger during the day or in controlled light circumstances.

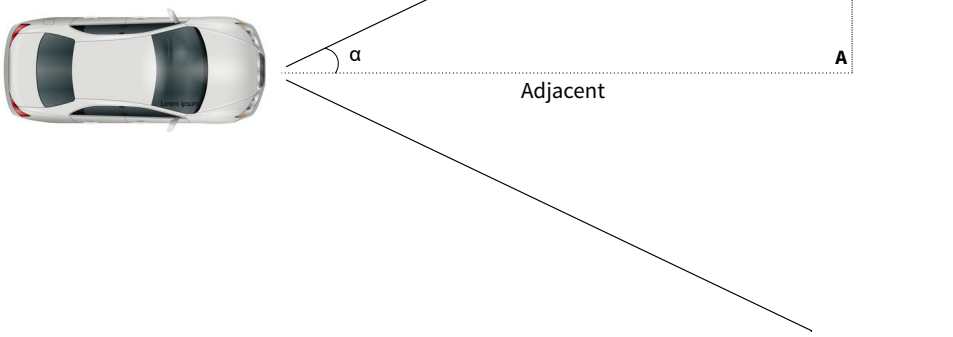
Distance from the Gatekeeper to the license plate

Gatekeeper 410X4: The distance to a license plate should never be more than 12 meters or less then 2 meters.
Gatekeeper 1250X4: The distance to a license plate should never be more than 30 meters or less then 5 meters.

Maximal horizontal recognition angle of 40°

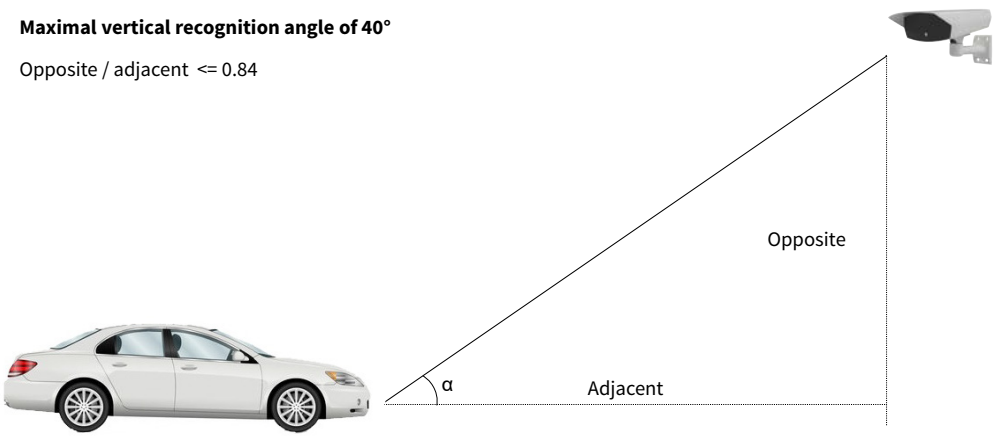
Opposite / adjacent <= 0.84

A = Perpendicular axis to the license plate
B = mounting position of the Gatekeeper



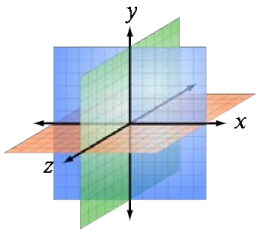
Maximal vertical recognition angle of 40°

Opposite / adjacent <= 0.84



TILTED ANGLES for 410X4 and1250X4

Tilted angle of a license plate in the x & y axis plane



The ANPR engine recognizes license plates in angled positions in all planes. Information about horizontal and vertical angles is covered before. The license plate itself can also be tilted in the x & y axis plane. This angles can be 10° maximum.