



# XOVIS



Trains



Trams / metros



Buses



Gondolas

## PCT1 Passenger Counting Sensor

ACCURATELY ACQUIRE ONBOARDING AND ALIGHTING DATA

Based on the robust 3D vision technology seen in the successful PC-Series, Xovis developed a new sensor series with special features for use on vehicles.

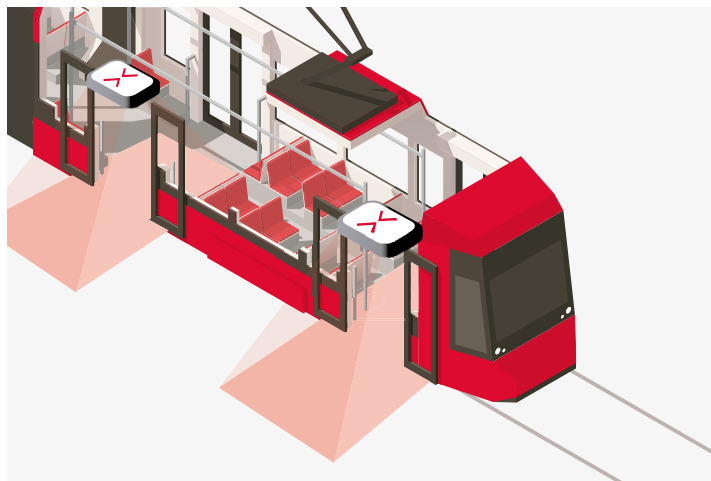
### CHALLENGE

Sensors used on vehicles for APC (automatic passenger counting) have to fulfill many specific needs:

- Wide door coverage with low mounting height
- Precise counting of very crowded door situations
- Robust industrial design

### SOLUTION: WIDE DOOR COVERAGE

The extended detection algorithm allows for the detection and tracking of bodies, thus enabling a low sensor mounting height while still covering a large door area.



### VEHICLE STANDARDS

To ensure reliable performance, the Xovis PCT1 sensor is electromagnetically compatible and is designed to withstand severe disturbances, such as vibration, impacts and a wide temperature range.

The sensor therefore complies with EN 50155 "Railway applications - Rolling stock - Electronic equipment", EN 45545-2 "Railway applications - Fire protection on railway vehicles" and UN/ECE R10 "Electromagnetic compatibility of vehicles".




### IoT IN TRANSPORTATION

The PCT1 passenger counting sensor offers all the connectivity required by a device that uses information technology in public transport applications. It can be integrated and connected easily in any IT infrastructure.

- Ethernet: 100 Mbit/s (IEEE 802.3)
- PoE: IEEE 802.3af, class 0
- Internet protocol: IPv4, DNS, NTP, DHCP
- Integrated web interface
- Data push for FTP(S), HTTP(S)
- REST API
- State-of-the Art IoT privacy and security

# TECHNICAL DETAILS PCT1

General	
<b>WORKING PRINCIPLE</b>	3D stereo vision distance measurement
<b>REQUIRED ILLUMINATION:</b>	Min. 10 lux
<b>MAX. PEOPLE TRACKING:</b>	Unlimited
<b>OPERATION TEMPERATURE:</b>	-25 °C ... 70 °C
<b>STORAGE TEMPERATURE:</b>	-40 °C ... 70 °C
<b>AIR HUMIDITY:</b>	0 % ... 95 %, non-condensing
<b>HOUSING:</b>	Aluminium
<b>SALT MIST:</b>	48 h acc. EN 60068-2-11
<b>INGRESS PROTECTION:</b>	IP65 (outdoor) acc. IEC 60529
<b>SHOCK &amp; VIBRATIONS:</b>	EN 61373 cat.1, Class B
<b>POWER SUPPLY:</b>	PCT1-ASP & PCT1-POE PoE: IEEE 802.3af, Class 0  PCT1-ASP: Auxiliary power supply: 12 ... 36 VDC -20 %/+25 %, protected against reverse polarity 10 ms interruption bridging
<b>POWER CONSUMPTION:</b>	< 4.5 W
<b>DIGITAL INPUT:</b>	Galvanically isolated, input Threshold: >5 V; low logic <1 V min. operating current of 1 mA
<b>DIMENSIONS (LXWXH):</b>	15.0 x 7.0 x 3.3 cm
<b>WEIGHT:</b>	485 g
<b>MOUNTING:</b>	Flush or surface mounting
<b>MOUNTING HEIGHT:</b>	195 to 300 cm
<b>INSTALLATION ANGLE:</b>	+/- 15° in x-axis, +/- 5° in y-axis
<b>EMC &amp; GENERAL ENVIRONMENTAL CONDITIONS:</b>	EN 50121-3-2:2006 acc. to EN 50155 UN/ECE R10 "Electromagnetic compatibility of vehicles"
<b>FIRE SAFETY:</b>	EN 45545-2, HL3 ; UN/ECE R118

Interfaces	
<b>CONNECTIONS:</b>	<p>PCT1-ASP &amp; PCT1-POE: M12 "D" 4-pin female connector acc. to standard (IEC 61076-2-101) for Ethernet and PoE </p> <p>PCT1-ASP: M12 "A" 8-pin male connector for auxiliary power supply, digital input and RS-485 port </p> <p>PCT1-POE M12 "A" 4-pin male connector for digital input </p>
<b>COMMUNICATION:</b>	Ethernet 100Mbit/s (IEEE 802.3)
<b>PROTOCOLS:</b>	IPv4, HTTP, HTTPS, FTP, FTSP, DNS, TCP, UDP, DHCP, MQTT
<b>CONFIGURATION / SERVICE:</b>	Integrated web interface

Standards Reference
<b>EN 50155/IEC 60571</b> Railway applications – Rolling stock – Electronic equipment
<b>EN 61373</b> Railway applications – Rolling stock equipment – Shock and vibration tests
<b>EN 45545-2</b> Railway applications – Fire protection on railway vehicles – Part2: Requirements for fire behavior of materials and components
<b>UN/ECE R118</b> Uniform technical prescriptions concerning the burning behavior of materials used in the interior construction of certain categories of motor vehicles

## DATA PRIVACY

Xovis sensors ensure GDPR-compliant passenger counting.

