TrainWise® Passenger Intercom (PI)

The TrainWise® Passenger Intercom (PC06) quickly connects passengers to the train operator via a simple, easy-to-use interface.

Speaker, microphone, call button, and status indicators are combined in a single attractive yet rugged unit.

The PC06 provides digitized audio transmission, automatic volume control to adjust for background noise, and a noise-rejecting microphone array provide optimal sound quality.

Product size and connectors may vary depending on configuration

The Passenger Intercom is part of the complete TrainWise® Passenger Information System suite that includes PA amplifiers, automated signage, and crew and passenger intercoms. Used together, these products provide an IEC 613753-4-compliant system that enhances rider comfort and optimizes communication between drivers, passengers, operations centers, and maintenance crews.

Technical compliance

Railway standards	Compliant with IEEE and IEC rail design standards (including IEEE 16 and IEC60571/ EN50155)
	IEC 61375-3-4 Electronic railway equipment – Train communication network (TCN) – Part 3-4: Ethernet Consist Network (ECN)
	IEEE 1722 Audio Video Bridging and Time-Sensitive Networking protocols
Fire, smoke and toxicity	Compliant to 49 CFR Part 238.103 guidelines and NFPA-130

Options

Form factor	The PEI dimensions can be modified to suit a variety of required form factors
Braille text	Braille text available as an option for vision-impaired passengers
Text display	LCD or LED text display with pre-programmed messages available as an option for hearing-impaired passengers

Electrical interfaces

Power supply	1	Operating voltage range: 16VDC – 90VDC
Power consumption		5 Watt nominal, 20 Watt peak
Configuration inputs	17	Self-powered inputs for jumpers or dry contacts; can be used to define unit location/ID
PEI activation output	1	Relay output to signal PEI activation over trainline or other discrete line.
Door light control output	1	Relay output to illuminate door light when PEI is active
Ethernet ring ports	2	M12 A-coded: allows PEI to be a member of a Quester Tangent Passenger Information System Communications Ethernet Network.

Other interfaces

Internal microphone array	✓	Dynamic range > 90 dB, 100 Hz to 16 kHz
		Total harmonic distortion (THD) < 0.3 % for inputs < 100 dB sound pressure level (SPL)
		Operates at levels up to 120 dB SPL without damage
Internal speaker	✓	Frequency response: 70 Hz – 14 kHz, ± 3 dB
		Total harmonic distortion: <1%
Status LED	✓	Active / Hold (integrated in call button)

Mechanical characteristics

Dimensions	8 in x 6.5 in x 4.5 in (20.3 cm x 16.5 cm x 11.4 cm)
Weight	5 lb / 2.3 kg (approximate)
Connectors	Ethernet: 2 x M12 A-coded
	Vehicle Interface: MIL-DTL-5015/SAE-AS50151 circular connector or alternate as required
Call button	Vandal resistant pushbutton surrounded by protective ring to prevent inadvertent activation.
Status indicators	LED intercom status indicator light in call button
Ingress protection	IP30

Environmental conditions

Operating temperature	-40°F to +158°F (-40°C to +70°C)
Storage temperature	-40°F to +185°F (-40°C to +85°C)
Shock and vibration	IEC 61373; Category 1, Class A
Dielectric withstand	1.15kVAC circuit to circuit and circuit to chassis

Electromagnetic compatibility

Surge immunity	IEC 62236-3-2, Table 7
Conducted emissions	IEC 62236-3-2, Table 3, 4, & 5
Conducted immunity	IEC 62236-3-2, Table 7 & 8
Radiated emissions	IEC 62236-3-2, Table 6
Radiated immunity	IEC 62236-3-2, Table 9 (with RF susceptibility verified to 6 GHz)
Electrical fast transient	IEC 62236-3-2, Table 7 & 8
Electrostatic discharge	IEC 62236-3-2, Table 9

Communication

ECN protocol support	Protocols included in IEC 61375-3-4 Electronic railway equipment – Train communication network (TCN) – Part 3-4: Ethernet Consist Network (ECN) Other data exchange protocols supported on request
Ethernet ring protocol support	Compliant with IEEE Audio / Video Bridging and Time Sensitive networking protocols