## TrainWise® Crew Intercom (CI)

The TrainWise® Crew Intercom (PC11) gives the train operator complete control of all communications through a single, integrated unit.

This controller connects through an onboard Ethernet network to other Quester Tangent CIs, Public Announcement Amplifiers, and Passenger Emergency Intercom stations, and provides an interface to the local train radio.

Soft buttons and indicators on a connected Quester Tangent touchscreen control CI functions and indicate communication mode and Passenger Emergency Intercom call location and status

Digitized audio transmission and volume control automatically adjusts to background noise to optimize sound quality

Product size and connectors may vary depending on configuration

The Crew 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

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|---|---|
| Custom control panel | QT can provide custom control panels, including buttons and indicators, for installation on the cab console that interface with the CI to control the mode, volume, etc. |
| Train radio interface | CI can interface with train radio for train to wayside communication, including PA announcements from control center. |
| Cab microphone and speaker | QT can provide the cab operator microphone and speaker for interface with the crew intercom. |

# Electrical interfaces

| Power supply | 1 | Operating voltage range: 16VDC – 90VDC |
|---|---|---|
| Power consumption | | 5 Watt nominal, 20 Watt peak |
| Configuration inputs | 5 | Self-powered, inputs for jumpers or dry contacts. Can be used to define unit location/ID or monitor external switches/buttons such as PTT or hook switch |
| ECN Ethernet ports | 1 | M12 D-coded: connection to Ethernet Car Network (ECN) |
| 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

| Radio audio input | 1 | Line audio input for train radio |
|---|---|---|
| Microphone audio input | 1 | Adjustable gain to support input levels from microphone to line level |
| Speaker audio output | 2 | Line outputs for Cab Speaker and Radio Speaker:<br>- Frequency response:100 Hz-10 kHz, +1, -2 dB<br>- Speaker power output/channel: 8 Watts RMS<br>- Total harmonic distortion: <1% @ 8 W<br>- Load impedance: 4 – 16 Ohms |

# Mechanical characteristics

| Dimensions | 8 in x 6.25 in x 4.5 in (20.3 cm x 15.9 cm x 11.4 cm) |
|---|---|
| Weight | 3 lb / 1.4 kg (approximate) |
| Connectors | Ethernet: 1 x M12 D-coded; 2 x M12 A-coded<br>Vehicle Interface: MIL-DTL-5015/SAE-AS50151 circular connector or alternate as required |
| 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 |