

PC3141 Programmable Controller for Rail Vehicles with MVB

EN 50155 Compliant Programmable Controller supporting MVB for Railway Applications

The PC3141 has been designed using PC3 Series modules that have been proven to survive the rigors required for Railway Vehicles including:

- Electrical surges and transients of EN 50155 / EN 50121-3-2.
- Shock and vibration in accordance with EN 50155 / EN 61373.
- Climate range of -40°C to +85°C and relative humidity 5% to 95% non-condensing.

The PC3141 supports up to two independent (isolated) MVB networks.

Features and Benefits

- 10/100 Mbps Wired Ethernet in accordance with IEEE 802.3 via M12 D-Code connector
- One RS232 serial communications port
- Two isolated RS485 serial communications port
- Two independent (isolated) MVB interfaces.
- Suitable for 110VDC power, in accordance with EN 50155
- Operating temperature range: -40°C to +85°C
- Connections for RS232 and RS485 via DB9 female connectors
- Connections for MVB via DB9 connectors (one male and one female)
- Connections via cage clamp plug socket connectors
- Conformal Coating
- EN 50155 Compliant

Applications

- Passenger Vehicle Condition Based Monitoring
- Heating Ventilation Air Conditioning (HVAC) Control Systems
- Locomotive Performance and Condition Monitoring
- Trackside Monitoring and SCADA
- Industrial Control Systems
- Onboard controls for fire protection, power packs and doors

Ordering Information

- Part Number: 070-0472



Specification

Description	PC3141 Programmable Controller supporting MVB for Railway Applications	
Environmental	Operating temperature range: -40°C to +85°C (EN50155 Class TX)	
	Storage temperature range: -40°C to +85°C (EN50155 Class TX)	
	Relative Humidity: 5% to 95% non-condensing	
	Shock and Vibration: EN 61373:1999 Category 1 – Class B	
Power Supply	Nominal Input Voltage	110VDC
	Minimum Input Voltage	66VDC (EN50155 Class C1)
	Maximum Input Voltage	154VDC
	Nominal Input Current	13 mA
Processor Features	Processor	32 bit Digi NS9360 processor 155MHz
	Flash Memory	4 MB
	SDRAM	16 MB
	Battery-Backed SRAM	512 kB
	Battery-Backed Real Time Clock	
Watchdog	Hardware Watchdog	
Operating System	Digi NET+OS 7.2 (ThreadX)	
Communication Ports	Ethernet	10/100 Mbps IEEE 802.3
	Non-isolated RS232 (TIA-232F)	Five-wire with RxD, TxD, RTS and CTS signals
	Isolated RS485 (TIA-485)	Three-wire: A, B and SC. Isolated to 500 VAC
	MVB	Electrical Middle Distance (EMD) / Isolated Electrical Short Distance (ESD+)
MVB Features	Device Class	Class 1 – Process_Data and Device_Status support
	Line Redundancy	Dual line support with automated trusted line switchover
	Traffic Store Size	64kB
	Maximum Local Source / Sink Ports	1024
Mechanical	Product dimensions: 270mm x 223mm x 63mm	
Enclosure Material	Extruded Aluminium with Anodised Screen Printed Lid	
Ingress Protection (IP) Rating	IP20 (in accordance with EN 60529)	
Weight	2 kg (with plug connectors)	
MTBF	136,147 hrs @ 40°C	Standard: Telcordia SR-332 Issue 2 – Parts Count Method
Terminations	Plug/socket screw terminal connections (2.5 mm ² max.) on a 5.08mm pitch	
	Ethernet: M12 D-Coded Female	
	RS-232 and RS-485: DB9 Female	
	MVB_M1: DB9 Male with M3 Screw Locks, MVB_M2: DB9 Female with M3 Screw Locks	
Standards	EN 50155:2007	Railway Applications – Electronic Equipment Used on Rolling Stock
	EN50121-3-2:2006 IEC 62236-3-2:2008	Railway Applications – Electromagnetic Compatibility Part 3-2: Rolling Stock – Apparatus
	EN 61373:1999	Railway Applications Rolling Stock Equipment Shock and Vibration Tests
	EN 45545-2:2013	Railway Applications – Fire Protection for Railway Vehicles Part 2: Requirements for Fire Behaviour of Materials and Components
	STM-E-001B	Electronic Equipment Used on Rolling Stock Special conditions applying to the SNCF NF EN 50155 of October 2007
Standards	<ul style="list-style-type: none"> ISaGRAF V5 - IEC61131-3 (SFC, FBD, LD, ST, IL, FC) “C” Programmable 	

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