

PC3128 Controller for Rail HVAC Applications

Low Cost EN 50155 Compliant

The PC3128 is 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 PC3128 is an ideal low cost HVAC Controller for Railway Applications. The PC3128 is comprised of the following I/O: 24 digital inputs, 18 digital outputs, 8 analogue inputs and 2 analogue outputs.

Fully supports all of the IEC61131-3 languages:

- Ladder diagram
- Structured text
- Function block diagram
- Instruction list
- Sequential function charts

Browser based maintenance interface:

- Real time monitoring and control including graphing
- Customisable Graphical User Interface
- Datalog, event log and CSV file download
- Multilingual - support for up to 8 languages
- Direct to hard disk variable recording and playback
- Software upgrade facility
- Customisation with logo and colours.

Other Applications

- Locomotive Performance and Condition Monitoring
- Passenger Vehicle Condition Based Monitoring
- Trackside Monitoring and SCADA
- Industrial Control Systems
- Onboard controls for fire protection, power packs and doors



OEM Cloud Enabled

Data streaming services via the OEM Cloud to improve your operations



Ordering Information

- Part Number: 070-0456

PC3128 CONTROLLER

Specification

Description	PC3128 Programmable Controller for Rail Vehicles	
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	24VDC
	Minimum Input Voltage	14VDC (EN50155 Class C1)
	Maximum Input Voltage	36VDC
	Nominal Input Current	210 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	
Digital Inputs	Twenty four (24) digital inputs 5mA @ 24VDC. Current sinking (high-side switching)	
Digital Outputs	Eighteen (18) digital outputs. Qty 4 x 24VDC 1.0A, Qty 14 x 24VDC 0.5A. Current sourcing (high-side switching). Short circuit protection with automatic reset.	
Analogue Inputs	Eight (8) channels 12 bit resolution. Configured as: <ul style="list-style-type: none"> • AI01 to AI06 – NTC Thermistor (tuned for 5 KΩ @ 25°C) • AI07 to AI08 – 0 to 20mA 	
Analogue Outputs	Two (2) channels 10 bit resolution. Configured as: <ul style="list-style-type: none"> • AO01 to AO02 – 0 to 12V 	
Communication Ports	Ethernet	10/100 Mbps IEEE 802.3
	Non-isolated RS232 (TIA-232F)	Five-wire with Rx,D,TxD, RTS and CTS signals.
	Isolated RS485 (TIA-485)	Three-wire: A, B and SC. Isolated to 500VAC
Mechanical	Product dimensions: 182mm x 316mm x 66mm (without DIN41612 style D back shell). Product dimensions: 182mm x 316mm x 102mm (with DIN41612 style D back shell).	
Enclosure Material	Extruded Aluminium with Anodised Screen Printed Lid	
Ingress Protection (IP) Rating	IP20 (in accordance with EN 60529)	
Weight	1.2 kg (without plug connectors).	
MTBF	373,274 hrs @ 40°C	Standard: Telcordia SR-332 Issue 2 – Parts Count Method.
Terminations	Plug/socket 32-pin DIN41612 style D connector	
	Ethernet: M12 D-Coded Female	
	RS-232 and RS-485: DB9 Female	
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 – Aparatus.
	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.
Programming	<ul style="list-style-type: none"> • iecTeso – IEC61131-3 (SFC, FBD, LD, ST, IL, FC) • "C" Programmable 	
Protocol	Modbus TCP/IP slave	
Optional Software Protocols	<ul style="list-style-type: none"> • IPTCom, IP Flexity, EtherNet/IP (CIP), TCNOpen and Modbus TCP/IP via on board Ethernet M12 port. • Alstom HPTS RS485, Toshiba RS485, Mitrac RS485 and Cosmos RS485 via on board RS485 port. 	
Optional Protocols with additional I/O Modules	<ul style="list-style-type: none"> • CANopen (IO3610 module) • MVB EMD (IO3620 module) • MVB ESD+ (IO3625 Module) • LonWorks (IO3630 module) 	<ul style="list-style-type: none"> • MELCO 20mA Current Loop (IO3650 module) • MELCO RS485 HDLC (IO3660 module) • FIP (IO3670)
Accessories	I/O Cable pre-terminated with DIN 41612 Plug (Lengths: 1.5m, 3.0m and 5.0m)	

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