

RIOM

VEHICLE CONTROL UNIT

EN 50155

REMOTE I/O MODULE



The RIOM features an embedded PLC, with integrated communication gateway and remote input/output functions.

In TCMS architectures, the RIOM manages the sub-systems such as HVAC (air conditioning), doors, brakes, bogies, auxiliaries, power-packs, passenger information, fire safety, etc...

The RIOM has been designed by Leroy Automation according to the EN 50155/IEC 60571 standards. The RIOM has the reliability RAMS features for a suitable integration in SIL2 system architectures.

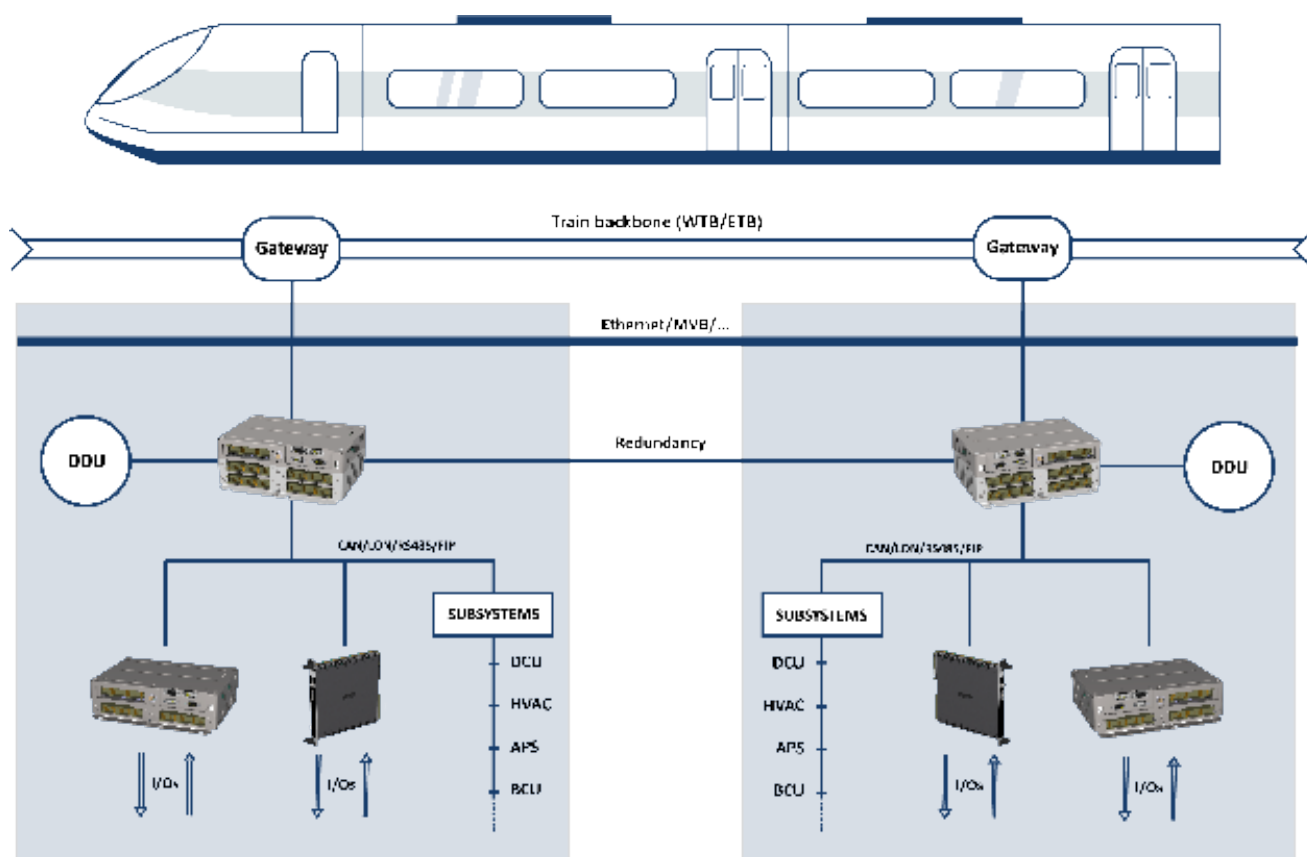


Patented solution for non-dissipative inputs.

PROGRAMMING

- C-programming or IEC 61131-3 STRATON

TYPICAL TCMS ARCHITECTURE



TECHNICAL SPECIFICATIONS

POWER SUPPLY	24Vdc, 36Vdc or 72-110Vdc Protection : Against polarity inversion and over voltage	ANALOG OUTPUTS	Scales : 0-10Vdc and 0-20mA Resolution/Accuracy : 12-bit DAC/2% full range worst case
DIGITAL INPUTS	Nominal voltage/Incoming Current : 72-110V, 36V or 24V/10mA (continuous fritting) Protection : Polarity Inversion and Over voltage Non-dissipative inputs Patented solution	ANALOG INPUTS	Scales : ± 10 Vdc and ± 20 mA Resolution/Accuracy : 12-bit ADC/2% full range worst case
DIGITAL OUTPUTS	Per board : 8 Active/Common relays + 8 Active/Inactive/Common relays Voltages on the contact : 16 to 160Vdc Max. switching power/voltage/current : 8A on 30Vdc/0,4A on 110Vdc Insulation between outputs contacts : 1,000Vac (50Hz, 1mn)	COMMUNICATION	Max configuration : Ethernet, CAN 2.0, MVB or LON, 2x RS485, RS232 Maintenance link
		DIMENSIONS	215mm x 245mm x 100mm (W x H x D)
		CONSUMPTION	45W max according to configuration
		WEIGHT	<3.5 kg according to configuration

ENVIRONMENTAL QUALIFICATION TESTS

EMC TESTS

NF EN 50155	Emission (150kHz-500kHz)	Max 99dB	
NF EN 50155	Emission (500 kHz-30MHz)	Max 93dB	
NF EN 50155	Emission (230Mhz-1GHz)	Max 57dB	
NF EN 61000-4-2	ESD Immunity	+6kV/+8kV	Criterion B
NF EN 61000-4-3	Radiated electromagnetic field immunity	10Vrms	Criterion A
NF EN 61000-4-4	Fast transient/burst immunity	± 2 kV	Criterion A
NF EN 61000-4-6	Conducted disturbances immunity	10Vrms	Criterion A
NF EN 61000-4-29 NF EN 50155	Inrush current measurement Surge immunity	± 1.8 kV	Criterion A
NF C 93050 NF F 67001-5	Isolation resistance measurement	>10M Ω	

FIRE PROTECTION TESTS

NF EN 45545 NFPA 130	Fire protection on-board rolling stock	HL3
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MECHANICAL TESTS

NF EN 50155	Vibration resistance	Criterion A
NF EN 60068-2-27 Ea	Shock resistance	Criterion A
NF EN 60529	Protection rating	IP30

CLIMATIC TESTS

NF EN 50155	Operation temperature	-40°C to +70°C (Tx)
NF EN 60068-2-1 Ab	Storage temperature	-40°C to +85°C (Tx)
NF EN 60068-2-2 Bd	Dry heat (Bb)	Criterion A
NF EN 60068-2-30 Db	Damp heat	Criterion A
NF EN 50155	Salt mist	Criterion A