TrainWise® Security Gateway

The TrainWise® Security Gateway (NS13) is an important tool in the design of secure Ethernet train networks. It is used to provide a barrier between security zones for onboard networks and between onboard and wayside systems.

The Security Gateway can be configured to handle gateway, router, VPN and firewall functions on a port-by-port basis. This allows for strong connection management between Ethernet consist networks, wireless gateways and other devices.

The NS13 is an essential element in implementing a Defense-In-Depth security strategy for rail transit networks.

Product size and connectors may vary depending on configuration

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)
	APTA APTA-SS-CCS-RP-002-13 Part II Defining a Security Zone Architecture for Rail Transit and Protecting Critical Zones
Fire, smoke and toxicity	Compliant to 49 CFR Part 238.103 guidelines and NFPA-130

Electrical interfaces

Power supply	1	Operating voltage range: 16VDC – 90VDC
Power consumption		25 Watts (approximate)
Configuration input	4	Self-powered, jumpered in vehicle interface connector cable plug to define unit location or other identification
Status output	1	Form A, 0.5 Amp, normally open, solid state output
Status LEDS	✓	Power, Health, Link/Activity

Mechanical characteristics

Dimensions	10 in x 7 in x 4 in (25.4 cm x 17.8 cm x 10.2 cm) (approximate, including mounting flange)
Weight	4 lb (1.8 kg) (approximate)
Connectors	Ethernet: 8 x M12 D-coded; Power/Config: 2 x M12 A-coded; 1 x M8
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

Protocols and features

Security	Application Layer Gateway (ALG), Firewall, VLAN
Virtual networking	Virtual Local Area Network (VLAN) 802.1Q
Traffic prioritization	Quality of Service (QoS) 802.1p
Redundancy	Rapid Spanning Tree Protocol (RSTP) 802.1w
Monitoring	Simple Network Management Protocol (SNMP); port mirroring
Configuration	Web-browser; SNMP

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

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