

IP based remote non-retroactive MVB / CAN sniffer for applications in rail systems

Features

- Modular Smart Input/Output (ModuSio) Module
- Ethernet & WLAN communication
- Power supply via PoE or 12/24V (DC)
- 1x MVB listen only via 2x 9-pol Dsub
- 1x CAN listen only via 1x 9-pol Dsub
- Data logger functionality: receives multiple time stamped data streams
- Galvanic isolation
- EN 50155 compliant



Introduction

The MVB/CAN sniffer unit **MIO03** extends the functionality of any embedded computer through simplest IP based remote I/O functionality. MIO03 allows non-retroactive data acquisition from TCN networks (MVB & CAN) even when the embedded computer is installed hundreds of meters away. This lowers not only cabling effort and cost but also eases up software integration dramatically.

MIO03 offers two read-only MVB interfaces to connect to both redundant channels allowing least influential connection to existing network infrastructures by its nonretroactive design. For installations with CAN as TCN network, MIO03 offers one read-only CAN interface to acquire CAN TCN messages.

In any case, only one cable is necessary for powering and communication. Used as an Ethernet module, MIO03 is powered simple through Power-over-Ethernet. When used as a WLAN connected device, the module is powered through the same M12 connector with 12/24V DC.

For easiest SW integration, MIO03 supports zeroconf protocols to allow automatic IP assignment and detection of the devices in the network. Additionally MIO03 allows secure firmware update through WLAN or Ethernet.

Applications

- Condition-based / predictive maintenance
- TCN anomaly detection systems
- Fleet optimization
- Security gateway
- Data logger

Software

ModuSio products are easily integrated into applications through standardized, platform and programming language independent protocols (Protobuf and TCP).

They are supported by open source client libraries that provide APIs for common programming languages.

API functions include:

- Interface configuration, e.g. setting baud rates
- Defining and receiving one or more streams of time-stamped samples

Specifications

Input/Output	S103-MI003-
MVB	MVB Read-only dual channel A/B via 9p DSub (plug) MVB Read-only dual channel A/B via 9p DSub (socket) Connected through according to EN 61375-3-1 standard
MVB data rates	1,5 Mbit/s
CAN	CAN read-only via 9p DSub (plug)
CAN data rates	Up to 1 Mbit/s
RS485	Alt. to CAN interface RS485 read-only via 9p Dsub (plug)
RS485 data rates	Up to 256 kBuad
Galvanic isolation	750V DC / 3 Groups (MVB/CAN/Shield)
Host Interface	
Ethernet	10/100 Mbit/s Ethernet via 8-pin M12 x-coded
WLAN	WLAN IEEE 802.11b/g/n
Power Supply	Power-over-Ethernet (PoE— PD) class 1 Alternative: 12/24V DC
Service Interface	USB 2.0 via USB-C
Mechanics	
Dimensions	Height: 151 mm; Width: 42 mm; Depth: 51 mm
Environmental	
Operating Temperature	-40...+70°C / 85°C (10min) (EN 50155:2017 – OT4 + ST1)
Storage Temperature	-40...+85°C (EN 50155:2017)
Humidity	95% (EN 50125-1:2014)
Altitude	3000 m max. above sea level (EN 50125-1:2014, class AX)
Shock / Vibration	EN 61373:2010; Cat. 1; Class B
EMC Emission / Immunity	EN 50121-3-2:2016; EMV 06 (2.0) Class S1; EN 301 489-1 (V2.2.3)
Safety	EN 50155:2017; EN 50153:2014+A1:2017; EN 50124-1:2017; EN 62368-1:2016; EN ISO 13732-1:2008
Fire&Smoke	EN 45545-2:2013 + A1:2015; HL3
Useful Life	20 years (EN 50155:2017, class L4)
Pollution Degree	PD2 (EN 50124-1:2017)
Certifications	CE

Order Information

Article number	Short	Configuration*	Power Input	MVB	CAN**	RS485**	Host IF	Service IF	FW update
S103-MIO03-	ModuSio TCN Sniffer	as Ethernet	PoE (PD) class 1	1x MVB (listen only)	1x CAN (listen only)	1x RS485 (listen only)	10/100 Mbit/s Ethernet	USB 2.0	Via USB / Ethernet
		as WLAN	12/24V DC	via 2x 9-pin DSub	via 9-pin DSub	via 9-pin DSub	WLAN IEEE 802.11b/g/n		Via USB / WLAN

*Configuration by means of software during provisioning process

** RS485 interface is shared with CAN interface (either or)

Please [contact](#) us for your specific requirements.

Accessories

N/A

Application Context — *ModuSio*

IP-based Modular Smart Input/Output modules for rail and public transport intelligently close the gap between any data source and the control computer. IP-based connections (LAN, WLAN) guarantee independence, abstraction and easy integration.

