



The Telecontrol Gateway XS-MU (TCG XS-MU) has been designed for redundant process connections of remote terminal units (RTUs) to the PSI control systems. A modular system can be set up by forming a stack (cluster), which consists of a central unit (Master/TCG XS-MU) and up to eight extension components (Slaves/TCG 3G-SU). A cluster can support the connection of up to 64 telecontrol channels to control systems.

The slaves take over the preprocessing of telecontrol data. The master (TCG XS-MU) takes over the line controlling and optimally supports the connection of telecontrol channels to control systems. Thus both the LAN capacity and processing power of the main computer needed can be reduced.

The TCG XS-MU supports the set-up of the redundant structures for fail-save networks by being connected redundantly to the control system. If a slave fails, the remaining slaves will not be affected and keep functioning. Each slave can be replaced or added during the operation.

Furthermore, an additional component “Central Power Supply (TCG CPS)” enables the central and redundant power supply of a cluster.

Main features

- Tracing of telecontrol lines
- Preprocessing und packeting of telecontrol protocols
- Automatic interface passivation in case of line failure
- Redundant power supply by using a second DC connector (hot standby)

Application areas

- Gateway between control systems and RTUs
- Data concentration
- Preprocessing of telecontrol protocols
- Protocol conversion

Interfaces

- 10× Ethernet interface
- 1× RS-232 interface
- 2× USB interface

Security

- Hardened system components
- Secure protocols (SSH/SSL, SFTP, HTTPS)
- Firewall configuration
- Deactivation of unused interfaces and services

Options

- IEC-60870-5-104 support
- Central and redundant power supply of a cluster (TCG CPS)
- DIN rail power supply unit (TCG DPS)

Technical data

Mechanics	
Model	19-inch rack mount housing
Dimensions	442 × 44.45 × 290 mm ³ (w/h/d) conforming to DIN 41494, section 5
Packaging dimensions	55 × 15 × 37 cm ³ (w/h/d)
Weight/gross weight	3.7 kg/4.3 kg
Cooling	Convection cooling
Environment	
Operation	DIN EN 60721-3-3:1995-09A2:1997-07 class 3K3, 0 °C to +45 °C, 30 % to 80 % rel. humidity (non-condensing)
Transport	EN 60721-3-2:1997 class 2K3, -20 °C to +85 °C, 5 % to 95 % rel. humidity (non- condensing)
Storage (in packaging)	EN 60721-3-1:1997 class 1K3, -20 °C to +85 °C, 5 % to 95 % rel. humidity (non-condensing)

EMV	
Emission	EMV 2014/30/EU EN 55032:2016 Class A
Noise immunity	EN 55024:2010 + A1:2015
Service life TCG XS-MU	310.000 hr. MTBF at 25 °C
Product safety	
Electrical safety	2014/35/EU (LVD) EN 61000-3-2:2014, EN 61000-3-3:2013
Conformity	CE
Power supply	
Power consumption	15 W
Input voltage	12 ... 24 VDC ±10 %
Connector	3-pin connector conforming to IEC 60130-9 (IP 40) with screw locking
Redundant operation	Second DC connector (hot standby)

External power supply unit	
Model	Wall-mount power adapter (made in Germany)
Primary voltage	100 ... 240 VAC/50 ... 60 Hz
Secondary voltage	15 VDC (controlled)
Normal power	18 W (current-limited, short-circuit proof)
Primary connector	Exchangeable system EU, GB, US/J, AUS, IEC 320
Cable length	Approx. 2 m
Service life	200.000 hr. MTBF at 25 °C

Electronics	
Main Processor	32 Bit x86-Prozessor
Program memory	512 MB (SD Card)
Main memory	1024 MB (DDR2-SDRAM)

LAN interface (10)	
Type	10/100 Mbps twisted-pair interface
Purpose	2 uplinks to control center, up to 8 Slaves can be connected
Electrical values	Conforming to IEEE 802.3 clause 14 and 25 impedance: 100 Ω (symmetrical)
Connector	8-pin RJ45 plug (ISO 8877), addition 8-pin RJ45 plug for bypass and monitoring mode

RS-232 interface (1)	
Purpose	Configuration and maintenance access
Electrical values	38.400 baud conforming to RS-232
Connector	8-pin RJ45 plug conforming to ISO 8877

USB interfaces (2)	
Purpose	Extensions
Function	USB 2.0 host, hi-speed
Connector	USB type A

Function indicators	
System	LEDs for system messages (SYS), connection status to control center (S2) und system utilization (S1)
LAN interfaces	LEDs for activity and TP connection status and line speed 10/100Mbit/s (10/100) or connection status to TCG 3G-SU (CON) respectively
Signaling contact	Potential-free alert contact on the rear of the housing with max. capacity of 60 VDC/1 A

Software	
Operating system	NENUX (Linux-Kernel 3.18)
Software version	TCG XS-MU software 6.0
Basic features	<ul style="list-style-type: none"> – Controlling of up to 64 telecontrol lines – Logical controlling of telecontrol lines by integrated PSI software
Management	Configuration via command line interface (CLI) and a web interface or via the PSI KETEL protocol from the control system
Statistics and diagnosis	<ul style="list-style-type: none"> – Statistic commands – Diagnosis via integrated trace system (driver, decoding/encoding, packeting) and UNIX commands – Data and packet trace functions via the PSI KETEL protocol

Order information	Product code
TCG XS-MU	101459

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