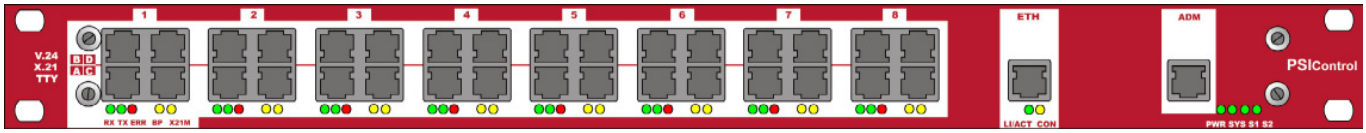
Gateway for Redundant Networks

Telecontrol Gateway

Data Sheet TCG 3G-SU



The **Telecontrol Gateway 3G-SU** (TCG 3G-SU) is a compact device in a 19 inch rack mount chassis. It is especially designed for telecontrol applications. With its interfaces, the Telecontrol Gateway 3G-SU supports redundant network topologies as they are necessary in fail-safe data networks. The eight integrated telecontrol interfaces are switchable between the interface standards V.24, X.21 and optionally TTY which are commonly used by the telecontrol industry. The Telecontrol Gateway 3G-SU serves as an interface extension for the Telecontrol Gateway 3G-8 and the Telecontrol Gateway XS-Master and is configured from these devices.

Main Features

- Tracing of telecontrol lines
- Packeting of telecontrol protocols
- Redundant connection of telecontrol devices
- Automatic interface passivation in case of line failure
- Redundant power supply through second DC connector (hot standby)

Interfaces

- 8 telecontrol interfaces with galvanical isolation;
- selection of interface mode (V.24, X.21) via software configuration; bypass/listening mode for V.24/TTY for the connection of previous systems
- 1 Ethernet interface (10/100 Mbps) for the connection to a TCG 3G-8 or TCG XS-MU
- 1 RS232 interface

Security Features

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

Options

- TTY interface
- IEC-60870-5-104 support
- Additional external power supply units for different voltage ranges and power consumptions

Application Areas

- Gateway between telecontrol technology and LAN
- Data concentration
- Preprocessing of telecontrol protocols
- Interface extension for Telecontrol Gateway 3G-8 and Telecontrol Gateway XS-Master

Mechanics	
Chassis	19´´ rack mount chassis (1 HE)
Dimensions	436 × 44,45 × 276 mm³ (w/h/d) conforming to DIN 41494, section 5
Packaging dimensions	54 × 15 × 37 cm³ (w/h/d)
Weight / gross weight	3.6 kg / 4.6 kg
Cooling	convection cooling
Environement	
Operation	EN 60721-3-3: 1995 / A2:1997 class 3K3, 0 °C to +45 °C, 30 % to 80 % rel. humidity (not condensing)
Transport	EN 60721-3-2: 1997 class 2K3, -20 °C to +85 °C, 5 % to 95 % rel. humidity (not condensing)
Storage (in packaging)	EN 60721-3-1: 1997 class 1K3, -20 °C to +85 °C, 5 % to 95 % rel. humidity (not condensing)
EMV	
Emission	EN 55022:2006+A1:2007 class A EN 61000-3-2:2006 EN 61000-3-3:1995+A1:01+A2:05
Noise immunity	EN 55024:1998+A1:2001+A2:2003 EN 61850-3:2002 for telecontrol lines with extended values for substations for IEC 10004-2:2008: 8 kV contact discharge, 15 kV air discharge IEC 1000-4-4:1995: 4 kV data lines IEC 1000-4-5:1995: 2 kV data lines

Gateway for Redundant Networks

Telecontrol Gateway

Data Sheet TCG 3G-SU

Product safety	
Electrical safety	EN 60950, low voltage directive (2006/95/EG)
Conformity	CE
Power supply	
Type	DC
Power consumption	15 VA
Input voltage	12 ... 24 VDC ±10 %
Connector	3 pin connector complying to IEC60130-9 (IP 40) with screw ring
Redundancy	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)
Output power	18 VA (overload protection, short curcuit proof)
Primary connector	exchangeable system EURO, UK, USA/Japan, AUS, IEC 320
Cable length	approx. 2 m
Reliability	200,000 hours @ 25 °C
Redundant operation	additional power supply needed
Supplies (optional)	second wall-mount power supply (TCG WPS) central power supply (TCG CPS) DIN rail power supply (TCG DPS)
Electronics	
Main processor	32 Bit RISC processor Intel IXP425@533 MHz
Main memory	64 MB (SDRAM)
Telecontrol interface V24 (8)	
Type	V.24 (RS232)
Purpose	level adjustment and galvanical isolation
Signal transmission	TXD, RXD, RTS, CTS, DTR, DCD
Interface rate	50 to 19200 bps
Electrical values	conforming to V.28
Isolation	1kV eff
Bus capability	possibility to passivate the sender (Party line)
Connector	8 pin RJ45 plug (ISO 8877) and 8 pin RJ45 plug for bypass/listening mode
Telecontrol interface X21 (8)	
Type	X.21
Purpose	level adjustment and galvanical isolation
Signal transmission	T+, T-, R+, R-, S+, S-, C+, C-, I+, I-, X+, X-
Interface rate	50 to 64000 baud, asynchronous (V11) and synchronous (X21-64Kbps)
Electrical values	conforming to V.11 (RS422)
Isolation	1kV eff
Bus capability	possibility to passivate the sender (Party line)
Connector	2 × 8 pin RJ45 plug (ISO 8877)
Telecontrol interface TTY (8) (option)	
Type	TTY
Purpose	level adjustment and galvanical isolation
Signal transmission	TX+, TX-, RX+, RX-
Interface rate	50 to 9600 bps
Electrical values	bipolar current +/-20 mA
Configuration	sender active, receiver passive
Isolation	1kV eff
Bus capability	possibility to passivate the sender (Party line)
Connector	8 pin RJ45 plug (ISO 8877) and 8 pin RJ45 plug for bypass/listening mode
LAN interface (1)	
Type	10/100 Mbps Twisted-Pair interface (TP)
Purpose	connection to a Telecontrol Gateway 3G-8 or Telecontrol Gateway XS-Master
Electrical values	conforming to IEEE 802.3I (100Base-T) impedance: 100 Ω (symmetrical)
Connector	8 pin RJ45 plug (ISO 8877)
RS232 interface (1)	
Purpose	configuration and maintenance access
Electrical values	38.400 bps, conforming to V.24
Connector	8 pin RJ45 plug (ISO 8877)
Function indicators	
System	LEDs for system messages (SYS) and power supply (PWR); 2 freely programmable LEDs (S1, S2)
Telecontrol interfaces	LEDs for line activity (RX, TX), error (ERR), clock pulse generation (X.21M) and bypass operation (BP)
LAN interfaces	LEDs for activity and TP connection status (LI/ACT) and for the connection to the master (CON)
Signaling contact	potential free alert pin on the rear of the housing with maximum capacity 230VAC/60 VDC/1 A

Software	
Operating system	NENUX (Linux kernel 2.6)
Software version	Telecontrol Gateway SW 4.2
Basic features	controlling of up to 8 telecontrol lines, packet assembling of telecontrol protocols, logical controlling of the telecontrol lines by integrated PSI software
Supported telecontrol protocols	mostly free configurable, among others: transparent mode, IEC-870-5-101, IEC-870-5-102, IEC-870-5-103, Siemens SINAUT-8FW, Siemens FW537, Siemens FW535, Siemens FW517, AEG F202, AEG SEAB, AEG Geadat 81-1GT, ABB Indactic 21, ABB RP570/571, AEG Geatrans GT-2100
Management	configuration through the master
Statistics and diagnosis	statistic commands, diagnosis through integrated trace system (driver, de-/coding, packeting), UNIX commands and data/packet trace functions through PSI-KETEL protocol

Order information	**Product code**
TCG 3G-SU VX	101879
TCG 3G-SU VXT	101687

PSI Nentec GmbH
Greschbachstr. 12 76229 Karlsruhe Germany
Tel. +49 721 94249-0 Fax +49 721 94249-10
info@nentec.com www.nentec.com