

DATASHEET

DATA CONCENTRATOR

MTDK2011



Interfaces

PLC, RS485, RS232, M-Bus, Modbus, ProfiBus, AS Interface, HART, CAN, Real-time Ethernet, USB, WI-FI, GPRS, GSM

Security

Communication security in compliance with NSA Suite B standards, AES256 encryption; symmetric encryption for common data, ECC-P256 asymmetric encryption for keys, time stamp with time validation, digital signature ECDSA-P256, key exchange ECDH-P256.

Data Concentrator (DC) includes device integrity protection.

DC can monitor other critical issues (i.e.: temperature, humidity, smoke)

SIEM - Summation Smart Meter Inside:

DC includes summation power analyzer. Based on the values from the SIEM it is possible to perform analysis and balances. Data from SIEM are transferred over

standard channel from DC to Server.

Industrial Standards

IP51, temperature operating range is from -35°C to 75°C.

Security against Power Failure, Data Backup

Security functions (device integrity protection, temperature alarm...) are protected against power failure. When power failure occurs, DC activates UPS and send message to server. Important data are stored in FLASH memory.

IPC with RTOS inside

Architecture of DC is based on industrial PC. It uses Linux operating system with priority scheduler. For a critical deterministic time response it is possible to add real-time layer.

Deep configurations, diagnostics, statistics

It is possible to configure behavior and constants of DC. You can diagnostic problems in communication, data validity, system resources and watch statistics of quality of communication and system resources.

Customization and Remote Upgrade

Next issues can be remotely upgraded: DC firmware, PLC modem firmware, modulation, encryption, protocol; Customization of HW interfaces available.

Additional data storage - CF, HDD, SSD

It is possible to add additional storage for data. With big storage, data can be stored for couple of months.

Integrated GPRS, GSM, EDGE modem

Data validation, balances, analysis

Auto-routing

Automatic discovering and management of e-meters topology

Other

Configurable priority scheduler for DC jobs

Tasks planning in time, regular jobs

Network quality of communication statistics

Diagnostics and configuration interfaces: Ethernet, GPRS, WI-FI, RS232 console, IEC62056-21

Diagnostics SW for remote management and embedded device for service on place

Technical Data

Voltage

Nominal Voltage U_N	3x230 V
Nominal Frequency	50 Hz
Operation Voltage Range	0.7 U_N to 1.15 U_N
Operation Frequency	45 Hz to 55 Hz

Consumption

Consumption	max 30VA
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PLC communication

Amplitude	128 dB/ μ V as per EN 50065-1
Sensitivity inputs	< 1mV

PLC outputs

Operation Voltage	0V to 400V
Operation Frequency	0Hz to 60Hz
Impedance for 50Hz	≥ 6 k Ω

RS 485

Baud rate	300 ÷ 115200 Bd
Data bits	7 or 8
Parity	N, E, O
Mode	half duplex
Stop bits	1 or 2
Galvanic separation	yes

RS 232

Baud rate	300 ÷ 115200 Bd
Data bits	7 or 8
Parity	N, E, O
Stop bits	1 or 2
Hardware control	yes, RTS, CTS
Galvanic separation	yes

M-bus

Baud rate	300 ÷ 9600 Bd
Voltage ($U_{MU,M}$)	$\geq +34$ V
Voltage ($U_{MU,S}$)	$\leq +22$ V
Current (I_M)	max 15mA
Current (I_S)	≥ 20 mA
Galvanic separation	yes

CAN

Galvanic separation	yes
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USB

USB	2.0
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Ethernet

Standard	IEEE802.3
Rate	10/100 Mbps

Wi-Fi

Frequency Band	2.4GHz ÷ 2.483GHz
Operating Range	300-400m
Spread Spectrum	IEEE 802.11b IEEE 802.11g : OFDM
Modulation Method	IEEE 802.11b : DBPSK / DQPSK / CCK IEEE 802.11g : BPSK, QPSK, 16QAM, 64QAM
Data Rate	IEEE 802.11b : 1, 2, 5.5, 11Mbps IEEE 802.11g : 6, 9, 12, 18, 24, 36, 48,54Mbps

GPRS, GSM

Working mode	GSM, GPRS
Tri-band	900/1800/1900 MHz

Impact of Surroundings

Temperature Range	
Operation	-35°C to + 75°C
Storage	-40°C to + 75°C
Ingress Protection IP	51 as per EN 60529

Display

Type	LCD graphic 128x64
Viewing size	93x70mm

Resistance to Voltage Impulses

Impulse Voltage and shape	6 kV and 1.2 μ s / 50 μ s
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Resistance to Permanent Overvoltage

Voltage between Phase and Neutral Wire	up to 450 V
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Electromagnetic Compatibility

Electrostatic Discharges	as per EN 61000-4-2
Test Voltage	8 kV
Number of Discharges	10
High-Frequency Electromagnetic Field	as per EN 61000-4-3
Difficulty Level 3, Vertical and Horizontal Polarization	
Frequency Zone	80 MHz thru 2 GHz
Electric Field Intensity	30 V/m
Fast Transient Phenomena (Impulse Groups)	as per EN 61000-4-4
Impulse Groups Time	15 ms
Impulse Groups Period	300 ms
Test Time	60 s
Test Voltage	4 kV
Radio Interference Suppression as per EN 55022	
Peak Course of Interference Voltage within Band	0.15 ÷ 30 MHz
Peak Course of EM Field Intensity within Band	30 ÷ 2000 MHz
Resistance to Interference Propagating Along Wiring as per EN 61000-4-6	0.15 ÷ 80 MHz

Weight and Dimensions

Weight	1.5 kg
Width	200 mm
Height	315 mm
Depth	129 mm
Case Dimensions	as per DIN 43857

Non-specified parameters as per EN 62052-11, EN 62053-21 or and EN 62053-23

Dimensions:

