Communication

Industrial and commercial

Digitally signed by Pastuşac Serghei
Date: 2023.06.26 11:45:07 EEST
Reason: MoldSign Signature
Location: Moldova

CU-XE111

E65C

Technical data

E65C-XE communication units provide Ethernet communication between E650, S650 or E850 meters and the metering systems.

Date: 10.07.2018

File name: D000062527 E65C CU-XE Technical Data en a.docx

Revision history

Version	Date	Comments
a	10.07.2018	First edition.

E65C CU-XE111 – Technical data

Design

Product type options			
Type	10/100BASE-TX	RS-485/422	RS-232
CU-XE111	●	●	●

Virtual bus (configurable)	
Interfaces	base meter, Ethernet, RS-485/422, RS-232

Supported service protocols

DLMS/IEC 62056-21 passthrough (base meter: data readout)
Passthrough and bridging protocol independent, verification recommended

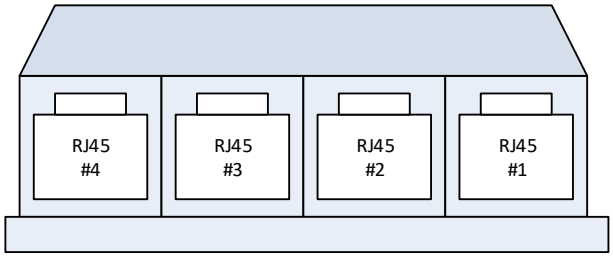
Installation

Directly in meter (E650 ZxD300/400xT, E850 ZxQ or S650 SxD400xT)
External operation with E65C CU adapter ADPx

Processor and hardware description	
Application processor	ARM Cortex-A5
Clock speed	600 MHz
Core performance	828 DMIPS
DRAM capacity	256 Mbyte
FLASH capacity	8 Gbyte
Encryption co-processor	AES, 3DES

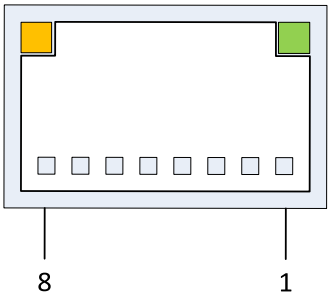
Connections

Terminal layout



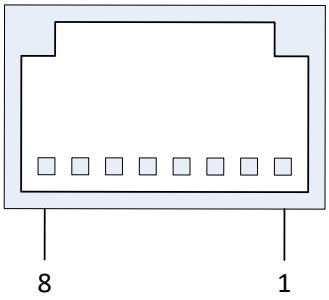
#1: Ethernet Port 1 (management)
#2: Ethernet Port 0 (main)
#3: RS485/RS422
#4: RS232

Ethernet interfaces — RJ45 socket



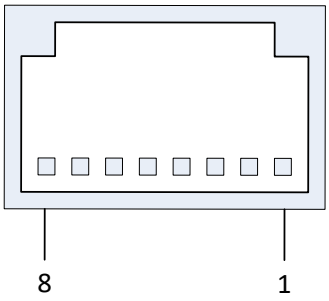
1	TxD+
2	TxD-
3	RxD+
4	not used
5	not used
6	RxD-
7	not used
8	not used
Orange	speed
Green	link

RS-232 interface — RJ45 socket



1	DSR
2	DCD
3	DTR
4	GND
5	RxD
6	TxD
7	CTS
8	RTS

RS-485/RS-422 interface — RJ45 socket



1	not used
2	GND
3	Tx+
4	Tx-
5	Rx-
6	Rx+
7	GND
8	not used

Connection to meter or CU adapter

10-pin connector at rear of CU

Ethernet connections

All Ethernet ports	10/100-BASE-TX
Standard	IEEE 802.3
Duplex	half or full
Auto MDI/MDIX	
Reinforced insulation	SELV voltage
Max. cable length	up to 100m

Main port

Port enable/disable

Management port

Port always active

Network bridging	
Number of devices in bridging mode	up to 20

Serial connections

RS-232 port	RJ45
Application	asymmetric, serial, asynchronous, full-duplex, bi-directional
Standard	EIA RS232-F / ITU-T V.24
Pin-out	EIA-561
Maximum transmission speed	19.2 kbps
Maximum cable length	3 m
Reinforced insulation	SELV voltage

RS-485/422 port	RJ45
Application	asymmetric, serial, asynchronous, half-duplex or full-duplex, bi-directional for multi-drop bus
DLMS/IEC application configuration	
Maximum number of slaves	31
Master/slave configurable	
Max. cable length and speed	environment/cable dependent

Typical use cases

- Up to 550m at 19.2 kbps with 31 slaves
- Up to 1000m at 19.2 kbps with 15 slaves

Built-in terminations

120 Ohm line termination selectable with switch and 680 Ohm bias network

Reinforced insulation SELV voltage

Information storage security

Encrypted storage of configuration files, user data and the applications in FLASH memory.

Firmware security

Cryptographic verification of all firmware executed by the processor from secure boot start-up.

Access control

Web browser (Web UI) access using passwords for configuration management or firmware updates using HTTPS (TLS) and HTTP.

Management-related functions

Time synchronisation options

Time stamp based on meter time

Firmware updates

Secure HTTPS-based drag-and-drop firmware update and configuration management (for backwards compatibility HTTP is available).
Firmware signed with digital signature.

Event logging

Syslog RFC 5424 logging of device boot, network link activity, application activity, security changes, network activity, login attempts and firmware updates. Logs are stored in non-volatile memory.

Networking-related functions

TCP/IP stack

IPv4 stack

Network bridge

DHCP client

Indicators

LED display (top to bottom)

	Boot/Ready, Connect, Error, Running
Ethernet states	green: no link, link, activity orange: 10 Mbps, 100 Mbps

Configuration switches

DIP switch	
Position 1	rx termination enable
Position 2	tx termination enable
Position 3	rx bias enable
Position 4	rx bias enable
Position 5	unused
Position 6	half-duplex enable
Position 7	half-duplex enable
Position 8	half-duplex enable

Power consumption

Maximum active/apparent power

4.0 W

Environmental influences

In general	same as for base meter
Exception	operating temperature -40 to +55°C
Pollution Degree	2

Insulation strength to meter

Insulation strength	4 kV at 50 Hz for 1 min.
Insulation spacing	at least 6.3 mm

Conformance

Insulation test according EN 61010-1:2010

Protective class II, double insulation
AC voltage isolation 4 kV_{rms} 50 Hz/1min.
6 kV peak 1.2/50 us

EMC emissions tests according to IEC 61000-6-3

Radio noise voltage to lines IEC-CISPR 11: 150 kHz to 30 MHz limit Class B
Radio noise to air IEC-CISPR 11: 30 MHz to 1000 MHz limit Class B

EMC immunity tests according to IEC 61000-6-2

ESD 8 kV contact discharge, 15 kV air discharge
RF EM field, amplitude modulation IEC 61000-4-3: 10 V/m; 80 MHz to 2.5 GHz; 80 % AM; 1 kHz
HF on lines, AM IEC 61000-4-6: 10 V RS-485/422 150 kHz to 80 MHz; 80 % AAM, 1 kHz

HF on lines, AM EN 55024: 3 V RS-232; 150 kHz to 80 MHz; 80 % AAM, 1 kHz

Weight and dimensions

Weight
approx. 100 g

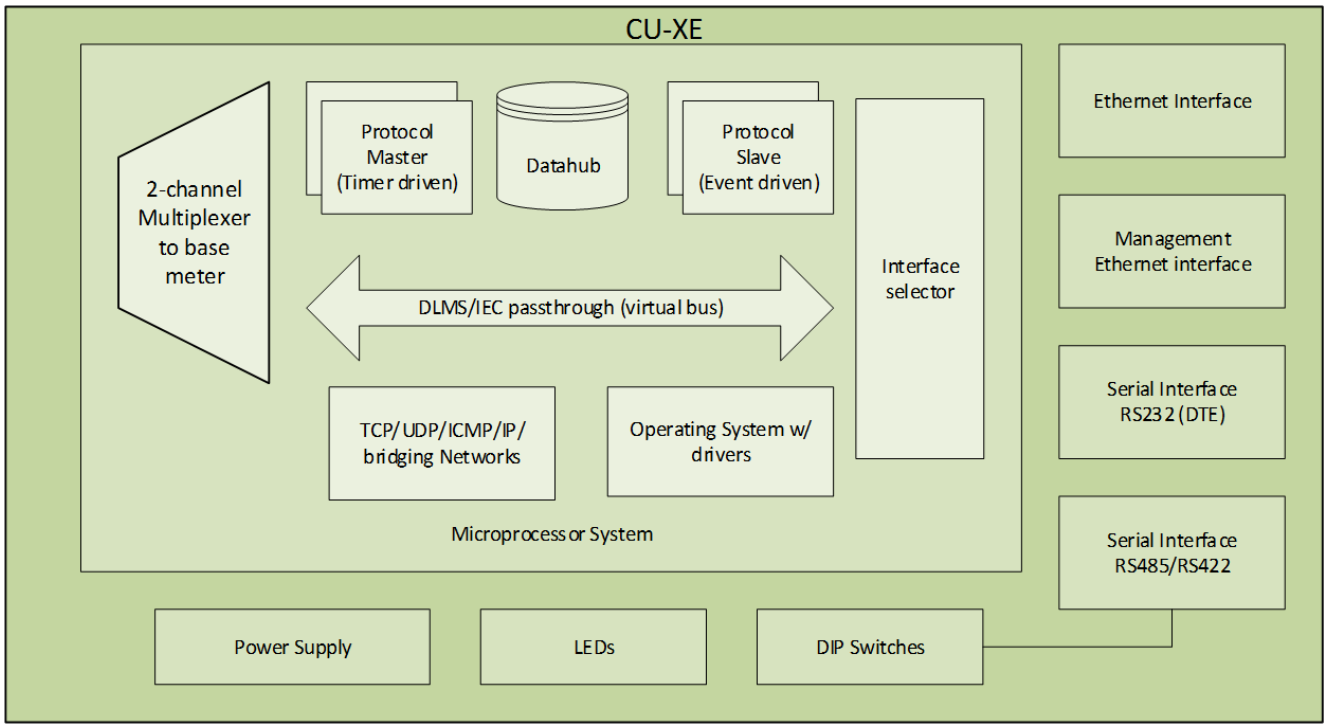
Width / height / depth
65 / 107 / 38 mm

Note: Longer than standard CU

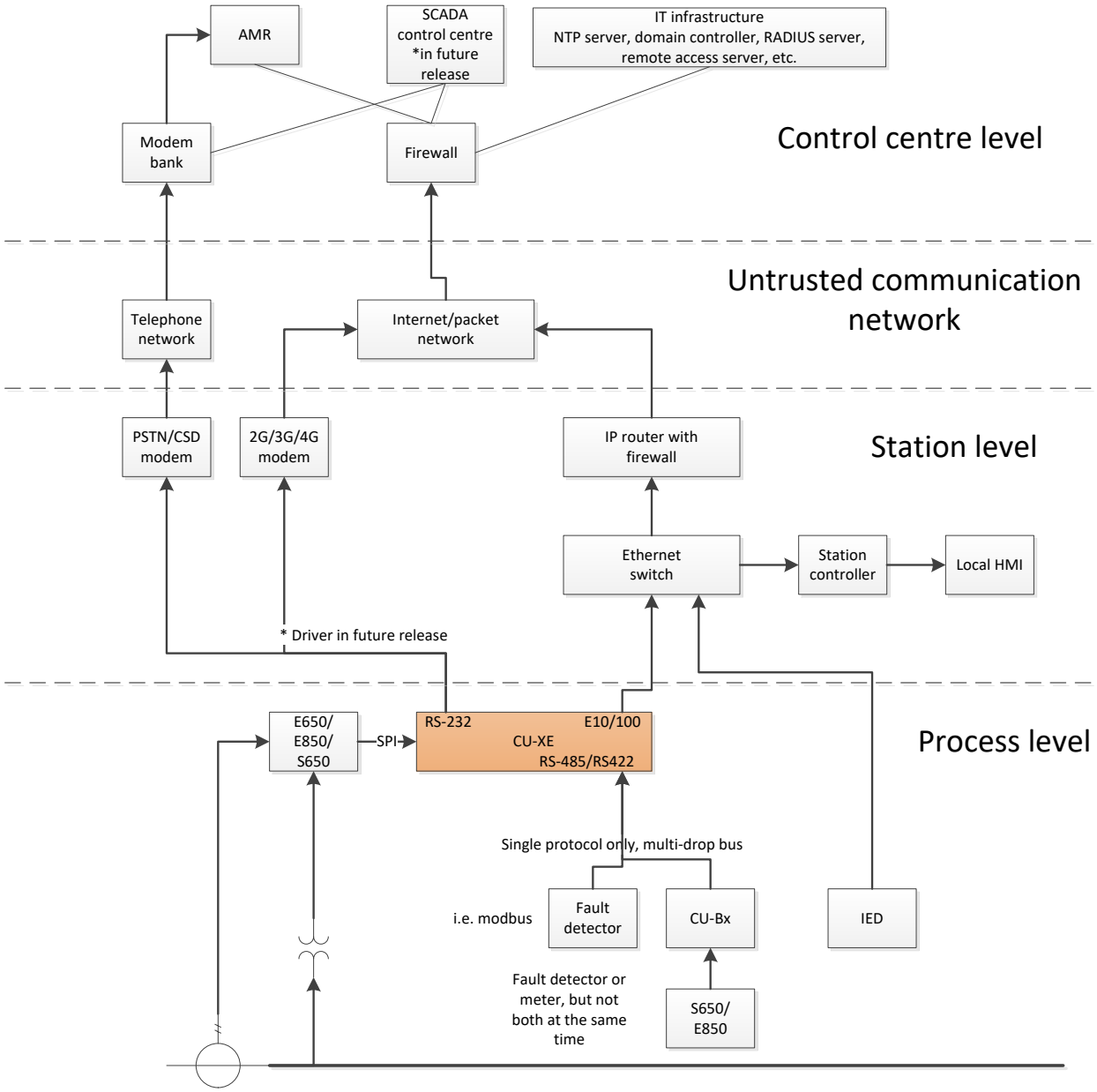
Material

Case
polycarbonate

Functional block diagram



Typical application diagram



Type designation	E65C	CU-X	E	1	1	1
Product type						
CU-X	Advanced architecture					
Primary interface type						
E	Ethernet					
Generation						
1	First generation					
Interface 1						
1	IEEE 802.3 10/100-BASE-TX					
Interface 2						
1	RS-232 + RS-485/422					

Contact:
Landis+Gyr AG
Theilerstrasse 1
CH-6301 Zug
Switzerland
Phone: +41 41 935 6000
www.landisgyr.com

Landis+Gyr
manage energy better