



Skalar.pro Mobile Services

Skalar.pro with integrated mobile services

The changeover of telecommunication grids to IP-based technology is well under way. Some providers have already completed the process; others are still proceeding with it. As a result of these changes the CSD service based on GSM will be deactivated. With Skalar.pro, you become completely independent of the CSD service; it is therefore the ideal communication device for use in the field of energy data collection and energy data transfer.

Skalar.pro Mobile Service uses the generalized services GPRS, EDGE, UMTS, HSPA and LTE (2.5G, 2.75G, 3G, 3.5G and 4G) for remote communication. This guarantees maximum bandwidth to deal with, for example, time-critical data protocols.

You can use Skalar.pro for NAT routing between mobile network and Ethernet service interface. In addition, you are able to connect Skalar.pro to GWA and SMGW, which secures your investment.

In detail

- IP-based data transfer via mobile network (GPRS, EDGE, UMTS, HSPA and LTE)
- LCM with IP communication
- Independent of CSD services
- Connection option to SMGW and GWA secures investment
- Usable for NAT routing
- Optional: secure data transmission with VPN technology

General

Housing	
Material:	moulded insulation case for terminal cover mounting in accordance with DIN 43857
Dimensions:	L x W x H = 176 x 107 x 65 mm

Operation and storage conditions

Degree of protection:	IP51
Protection class of terminal area:	IP30
Storage temperature:	- 40 °C... + 70 °C
Operating temperature:	- 25 °C... + 55 °C

Voltage supply

Nominal voltage:	100...230 V AC +/- 10 %
Nominal frequency:	50 Hz
Average power consumption:	3 W

Connection technology

Mains supply, serial interfaces, inputs and outputs:	plug-in terminals finely stranded (flexible): 0.2 mm ² ...2.5 mm ²
GSM antennas:	FME (male)
Ethernet interfaces:	RJ45 (8P8C)

µC System

Operating system:	embedded Linux
Program memory:	256 MB Flash
Data storage:	2 GB Flash

Real time clock

Accuracy:	+/-5 ppm over complete operating temperature range
Power reserve:	at least 6 days, typical 16 days

Information security

VPN and Cryptography

Standard:	in compliance with technical guideline BSI TR-02102
Key lengths:	AES: AES-128, AES-192, AES-256, RSA: 2048 bit
Optional:	Open VPN/IPsec in accordance with basic protection measures M5.148 by BSI

Protocols

Data transmission protocols for local communication

- IEC 62056-21, IEC 61107 (VDEW 2.1)
- EN 13757-2, EN 13757-3 (EN 1434/M-Bus)
- IEC 62056-5-3, IEC 62056-6-1, IEC 62056-6-2, IEC 62056-7-6 (DLMS/COSEM)

Data transmission protocols for remote communication

FTP, NTP, ToIP, HTTP/HTTPS, DNS, PPP, OpenVPN, IPsec

Interfaces

Serial interface 1

Type:	RS232/RS485 half-duplex - type can be switched via software configuration
Insulation resistance:	galvanic separation of device electronics (1 kV DC)

Serial interface 2

Type:	CL1 (current loop in accordance with IEC 62056-21)
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Serial interface 3 (optional*)

Type:	M-Bus master in accordance with EN 13757-2 (EN1434)
Number of standard loads:	8
Short-circuit protection:	limited to approx. 40 mA

Service interface Ethernet

Type:	Ethernet interface
Standards:	10BASE-T / 100BASE-TX in accordance with IEEE 802.3 Clause 14 and 15, auto-crossover

WAN interfaces

Mobile service	
Supported services and frequency ranges:	GPRS/EDGE 850/900/1800 MHz UMTS/HSPA 900/2100 MHz GPRS/HSPA+/LTE 800/900/1800/2100/2600 MHz GPRS class 12, CS1-4, up to 86.5 kbps EDGE class 12, MCS1-9, up to 236.8 kbps UMTS up to 384 kbps HSUPA 5.76 Mbps HSDPA 7.2 Mbps LTE 50 Mbps
Data rates:	
Reception sensitivity:	better than -108 dBm
SIM card format:	Micro SIM card reader for SIM cards with 1.8 V and 3 V in the terminal area

Inputs/Outputs

Signalling input

Type:	active; prepared for connection of external passive contacts
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Output

Type:	variable power supply output, short-circuit proof
Voltages:	+ 5 V, + 6 V, + 9 V or + 12 V
Maximum output current:	50 mA

Displays

Operation:	bicoloured LED on the front of the housing
Status:	bicoloured LED on the front of the housing

Conformity/Standards

Conformity:	CE
EMV directive:	2014/30/EU
RoHS directive:	2011/65/EU
Low voltage directive (LVD):	2014/35/EU
- applied standard:	IEC 60950-1
Radio equipment directive (RED):	2014/53/EU
Applied standards	
- emitted radiation:	IEC 61000-6-3, EN 55022 Class B
- interference resistance:	IEC 61000-6-2, IEC 61000-4-2, -3, -4, -5, -11