



Skalar.pro Mobile Service

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 = 176x107x65mm
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...230V AC +/- 10%
	Nominal frequency:	50Hz
	Average power consumption:	3W

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

µC System	Operating system:	embedded Linux
	Program memory:	256MB Flash
	Data storage:	2GB Flash
Real time clock		
	Accuracy:	+/-5ppm 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: 2048bit
	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, VoIP, 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 (1kV DC)
Serial interface 2		
	Type:	CL1 (current loop in accordance with IEC 62056-21)
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. 40mA
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 850/900/1800MHz UMTS/HSPA 900/2100MHz GPRS/HSPA+/LTE 800/900/1800/2100/2600MHz
	Data rates:	GPRS class 12, CS1-4, up to 86.5kbps EDGE class 12, MCS1-9, up to 236.8kbps UMTS up to 384kbps HSUPA 5.76Mbps HSDPA 7.2Mbps LTE 50Mbps
	Reception sensitivity:	better than -108dBm
	SIM card format:	Micro SIM card reader for SIM cards with 1.8V and 3V in the terminal area

Inputs/Outputs	Signalling input	
	Type:	active; prepared for connection of external passive contacts
	Output	
	Type:	variable power supply output, short-circuit proof
	Voltages:	+5V, +6V, +9V or +12V
	Maximum output current:	50mA

Indicators	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): - applied standard:	2014/35/EU 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