



## Skalar.pro ETHN

### Skalar.pro with Ethernet interface

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. Skalar.pro is a device completely compatible with latest technology; it is therefore the ideal communication device for use in the field of energy data collection and energy data transfer. Skalar.pro provides a practical solution to replace PSTN technology as it uses Ethernet standards 10BASE-T/100BASE-TX for remote communication and supports DSL connections with PPPoE via external DSL modems.

Secure VPN tunnels are used for communication as a rule; these tunnels are terminated in the device. Cryptographic functions of Skalar.pro are state of the art; they have been based on asymmetric cryptographic systems in accordance with RSA and meet highest demands on IT security.

### In detail

- IP-based data transfer via DSL/Ethernet
- Compliance with demands caused by changeover to All-IP
- LCM with IP communication
- Secure data transmission in accordance with standards and requirements (by BSI)
- Connection option to SMGW and GWA secures investment

<b>General</b>	<b>Housing</b>	
	Material:	moulded insulation case for terminal cover mounting in accordance with DIN 43857
	Dimensions:	L x W x H = 176x107x65mm
	<b>Operation and storage conditions</b>	
	Degree of protection:	IP51
	Protection class of terminal area:	IP30
	Storage temperature:	-40°C... +70°C
	Operating temperature:	-25°C... +55°C
	<b>Voltage supply</b>	
	Nominal voltage:	100...230V AC +/- 10%
	Nominal frequency:	50Hz
	Average power consumption:	3W

<b>Connection technology</b>	Mains supply, serial interfaces, inputs and outputs:	plug-in terminals finely stranded (flexible): 0.2mm <sup>2</sup> ...2.5mm <sup>2</sup>
	Ethernet interfaces:	RJ45 (8P8C)

<b>µC System</b>	Operating system:	embedded Linux
	Program memory:	256MB Flash
	Data storage:	2GB Flash
	<b>Real time clock</b>	
	Accuracy:	+/-5ppm over complete operating temperature range
	Power reserve:	at least 6 days, typical 16 days

<b>Information security</b>	<b>VPN and Cryptography</b>	
	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

<b>Protocols</b>	<b>Data transmission protocols for local communication</b>	
		- 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)
	<b>Data transmission protocols for remote communication</b>	
		FTP, NTP, VoIP, HTTP/HTTPS, DNS, DHCP, PPPoE, OpenVPN, IPsec

<b>Interfaces</b>	<b>Serial interface 1</b>	
	Type:	RS232/RS485 half-duplex - type can be switched via software configuration
	Insulation resistance:	galvanic separation of device electronics (1kV DC)
	<b>Serial interface 2</b>	
	Type:	CL1 (current loop in accordance with IEC 62056-21)
	<b>Serial interface 3 (optional*)</b>	
	Type:	M-Bus master in accordance with EN 13757-2 (EN1434)
	Number of standard loads:	8
	Short-circuit protection:	limited to approx. 40mA

<b>WAN Interfaces</b>	<b>Ethernet interface</b>	
	Type:	Ethernet interface
	Standards:	10BASE-T/100BASE-TX in accordance with IEEE 802.3 Clause 14 and 15, auto-crossover
	Protocols:	PPPoE for DSL registration via external DSL modem DHCP client Dynamic DNS updates

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

<b>Indicators</b>	Operation:	bicoloured LED on the front of the housing
	Status:	bicoloured LED on the front of the housing

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