

Data sheet

## RS-485 module

### for electricity meters

- RS-485 electrical interface for direct access to meter[s]
- Share GSM/GPRS modem – connect up to 32 electricity meters
- Galvanically separated serial communication
- Two-wire, half-duplex connection
- Cable length up to 1200 m
- Compliant with EIA-485
- DLMS and KMP protocols
- Baudrate 300 - 9600 baud
- 5A load control or 230 VAC tariff control



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## Application

The RS-485 module is used as a serial communication interface for direct access to the electricity meter and by that relevant meter data.

From electricity meter Kamstrup 162/382 generation M [SW Rev. AF1], Kamstrup 351 generation C [SW Rev. P1] and OMNIPower variant 1 [SW Rev. V1], the module provides a reliable multi drop electrical interface, supporting the Kamstrup electricity meter DLMS and KMP protocols.

The communication interface is compliant with the RS-485 standard published by the Electronic Industries Alliance (EIA).

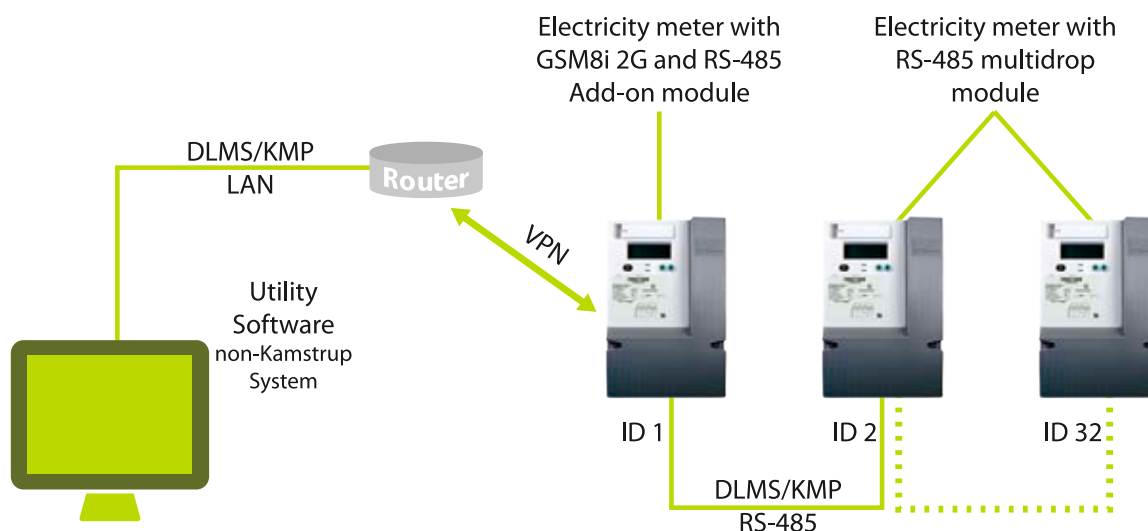
The differential signal and twisted pair cabling make the RS-485 resistant against electrical noise.

The simple bus wiring and long cable length also makes it ideal for use in building automation.

The module supports either a 5A load control output or a 2-tariff control input using 230 V.

## Installation example

In multidrop communication mode, the electricity meter's communication address (DLMS or KMP) needs to be programmed. This can be done using METERTOOL.



**NOTE!** Multidrop communication is **not** supported by Kamstrup systems, but can be used together with external systems.

## Technical data

	RS-485 Slave Module	RS-485 Master Module (Add-on)
<b>Electrical data</b>		
Supply	Internally via the electricity meter	
Power consumption	0.6 W	
Connection terminals	0.15 mm <sup>2</sup> – 2.5 mm <sup>2</sup>	
Operating temperature	-40 °C - +70 °C	
<b>Mechanical data</b>		
Storage temperature	-40 °C - +85 °C	
Relative humidity	< 90 %	
Weight	Approximately 30 g	
Dimensions, W x L x H	42 x 92 x 16 mm	42 x 75 x 29 mm
<b>Marking/approvals</b>		
CE marking	Meets the demands of the electricity meter	
<b>Data/Communication</b>		
Serial communication	300-9600 baud	9600 (GSM8i modem must be configured for DLMS or KMP transparent communication)
Signals	Tx+/Rx+, Tx-/Rx-, Half duplex	
Recommended cable	Twisted pair communication cable	
RS-485 input impedance	1 unit load	
<b>Load control output</b>		
Voltage rated	230 VAC	
Max current	5A/1250 VA	
Isolation voltage (open contact)	1000 V	
<b>Tariff control input</b>		
Control voltage	230 VAC +10 %/-15 %	
Control current	< 2 mA	
Input is galvanically isolated from the meter		

## Connection details – RS-485

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The RS-485 module is mounted on the modular area in the electricity meter using 8 pins module interface.

### 5A load control relay

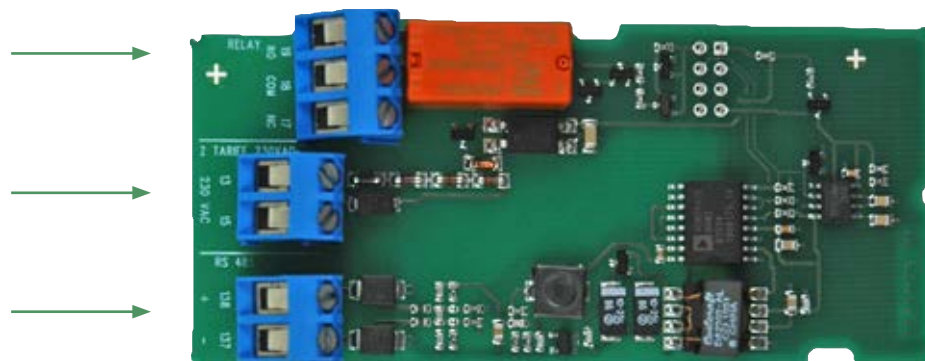
19 NO  
18 Common  
17 NC

### Tariff input

13 External 0 or 230 VAC  
15 External 0 VAC

### RS-485 communication

138 Tx+/Rx +  
137 Tx-/Rx -



6850-072

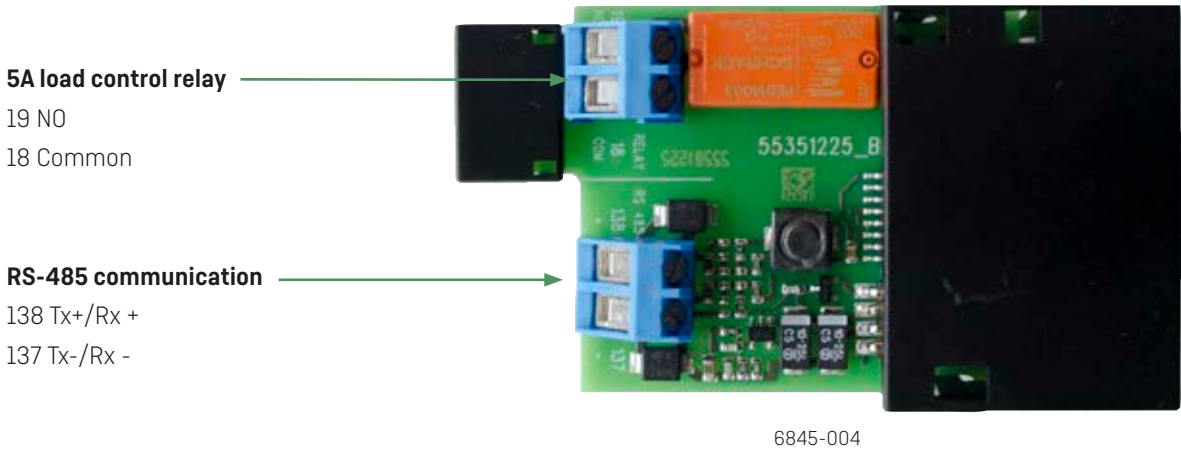
## Tariff control on module port

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Terminal 13	Terminal 15	Active tariff	Active tariff inverted
0 VAC	0 VAC	T1	T2
230 VAC	0 VAC	T2	T1

## Connection details – RS-485 (add-on)

The RS-485 (add-on) module is mounted on a GSM8i module in the module area in the electricity meter using 8 pins module interface.

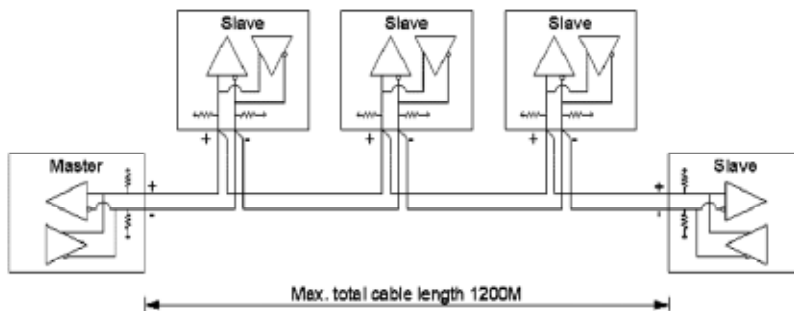


## Installation

It is possible to connect up to 32 electricity meters using RS-485 – the RS-485 option is available as add-on for GSM8i 2G and GSM8i 3G. The galvanically isolated serial communication supports half-duplex and is designed for maximum 9600 bps.

The RS-485 interface is available on GSM8i port B only, and thus an external antenna is required for GSM8i 3G.

The multidrop concept does not support alarms – these shall be disabled in the meters in advance.



The topology of an RS-485 network using Kamstrup isolated and failsafe RS-485 slave or add-on modules.

- Max 32 unit loads on RS-485 bus
- The RS-485 bus shall be un-terminated
- RS-485 pull up/down resistors  $\geq 33\text{ K}$

## Order specifications

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<b>Description</b>	<b>Type no.</b>
RS-485 Slave Module	6850-072
RS-485 Slave Module (Add-on)	6845-004
GSM8i 2G with RS-485 add-on	6819-060-00000
GSM8i 3G with RS-485 add-on	6817-060-00000

RS-485 module

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