

# SIEMENS

## AMIS

Automated Metering and Information System

### TD-3530/TACU30 Third-Party Device Gateway

Integration of meters from other manufacturers



- Connection and integration of max. 3 meters from third party manufacturers over a RS485 or CS interface
- Device-specific implementation of IEC 62056-21 available
- Integrated LV-DLC-communication
- Acquisition of accounting- and metering specific data on demand of the control center
- Automatic time setting (AMIS system time) in the connected meters
- Failure monitoring of the connected meters
- Infrared interface for local read-out and parameter setting with PDA (Personal Digital Assistant) and Web-Browser

## Application and Function

The third-party device gateway TD-3530/TACU30 (Terminal Adapter Communication Unit) is a device with microprocessor support and serves to connect up to 3 meters from third-party manufacturers over a RS485- or CS interface

The third-party device gateway TD-3530/TACU30 is a component of the complete solution AMIS for the acquisition of consumption data and the management of distribution networks. AMIS stands for Automated Metering and Information System.

The third-party device gateway communicates with the higher-level devices (data concentrators of the series CP-341x) over the low-voltage energy distribution network and can be parameterized and read-out remotely.

The third-party device gateway has an internal clock (synchronized with the AMIS system time, i.e. GPS-accuracy) and calendar.

With the help of one multicolored LED (RY/ER) and 5 single-colored LED's (L1-L5) the states and values of the load switching device are displayed.

A contact situated between the terminal cover and the housing detects, whether the terminal cover is open or closed (manipulation contact).

The service interface is realized by means of an infrared connection, which is defined in the standard IEC62056-21. It consists of a transmit diode and a receive diode on the load switching device and an infrared sensor head (according to IEC62056-21) that can be connected to a computer or PDA using RS232 or USB-connector. The third-party device gateway can be parametrized and diagnosed via the IEC62056-21 interface.

Further an integrated webserver is provided via this service interface which also can be used for diagnostics and parameter setting.

One communication module, either a RS-485 (TD-3538) or a current-loop module (TD-3539), can be connected to the third-party device gateway.

Supported third-party meters:

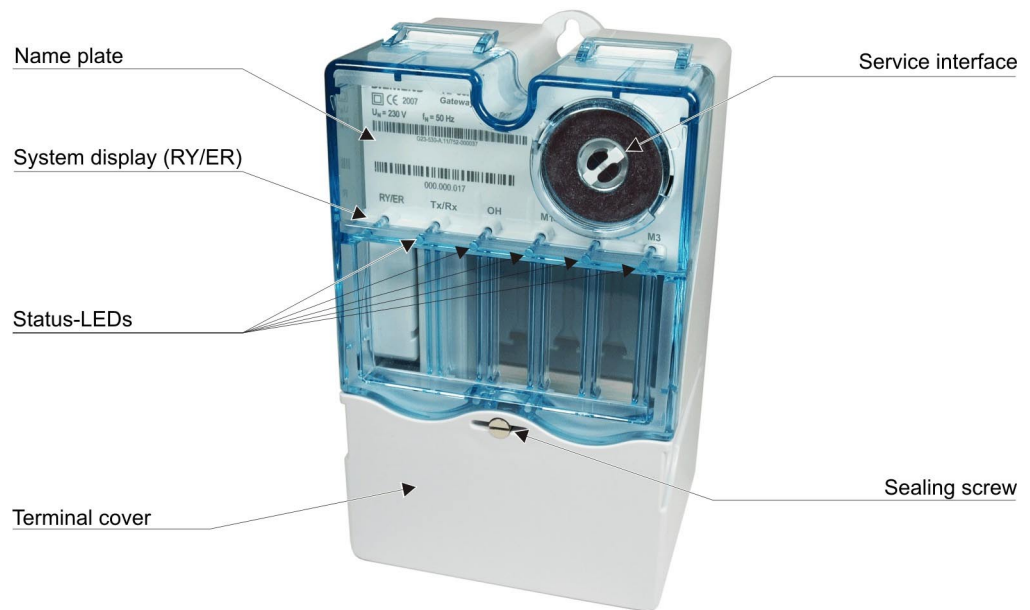
- L&G ZMB 310
- L&G ZMD 410
- Elster A1500/A1350
- EMM LZQJ

Following data can be read/set:

- Load profile
- Logbook
- Billing data
- Time
- Accumulation

The time of the third-party meters is synchronized 1x per day if released.

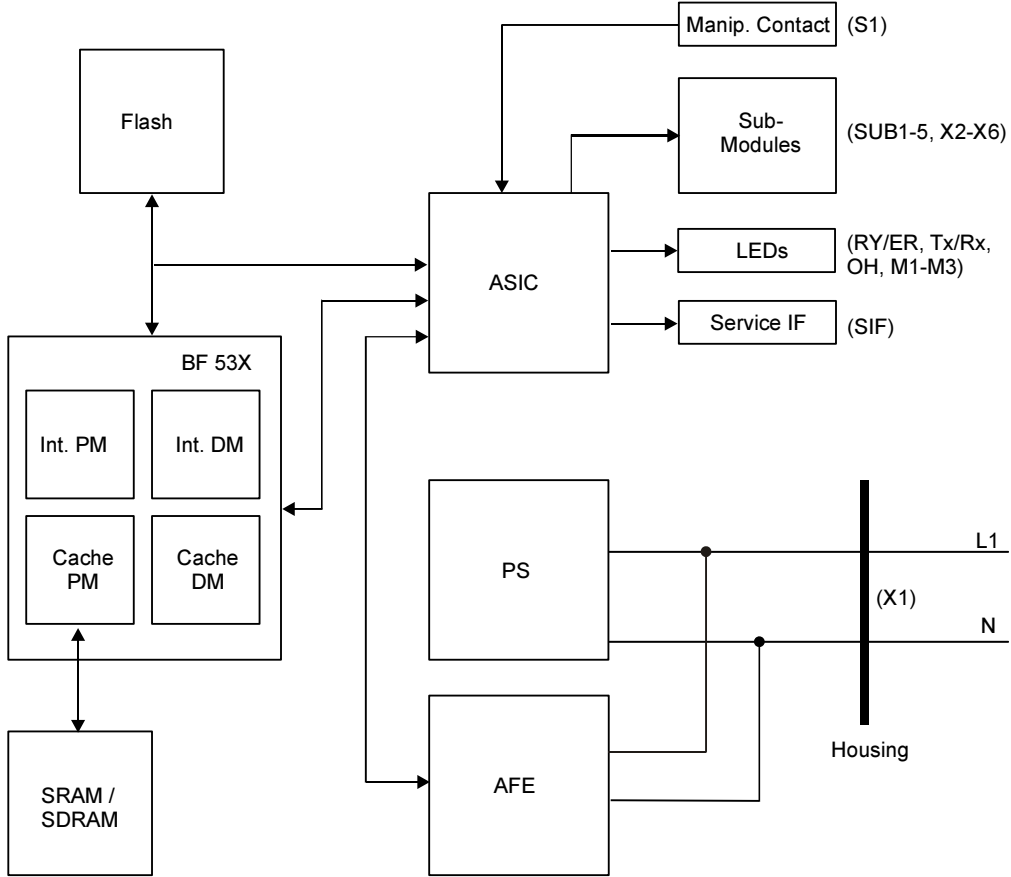
## Mechanical Design



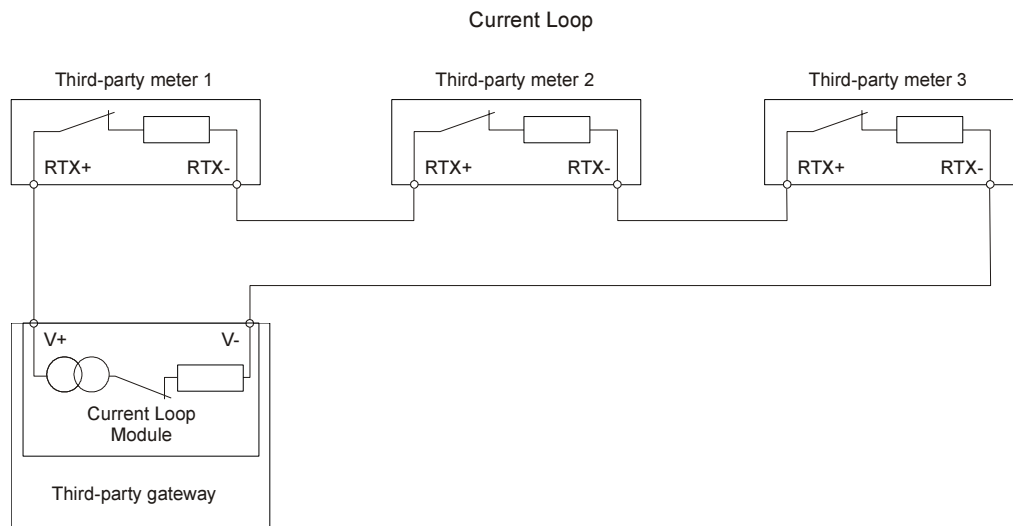
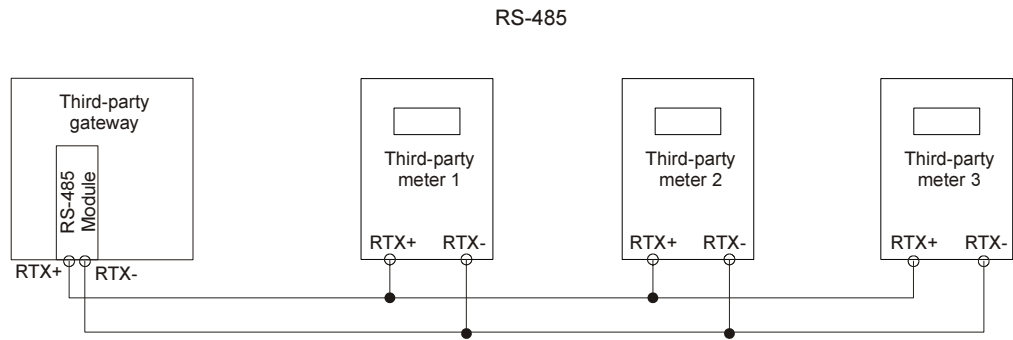
### With opened terminal cover and one communication module



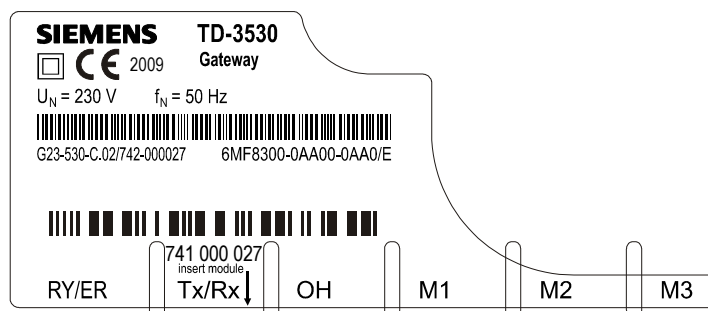
# Block Diagram



## External Circuitry



## Name Plate



## Technical Specifications

Parameter description	Types, Values, Ranges, Settings
Nominal voltage	230 VAC
Voltage range	230 VAC -20% / +15%
Nominal frequency	50 Hz
Power consumption	nominal 3.4 W, max. 8.8 VA
Display elements	<ul style="list-style-type: none"> <li>• 1 multi-colored LED (RY/ER) and</li> <li>• 5 single-colored LEDs (Tx/Rx, OH, M1-M3)</li> </ul>
Realtime clock	Synchronized internal, via control center or mains frequency With season switching, setable
Running reserve of clock (RTC)	<ul style="list-style-type: none"> <li>• min. 24 hours after 1,5 hours charging time</li> <li>• min. 84 hours after 24 hours charging time</li> </ul>
Optical service interface	According to IEC62056-21 Mode C or via integrated Web-Server
Interface for remote read-out and parameter setting	DLC-communication according to EN 50065 in the frequency band 9 - 95 kHz (A-Band)
Possibility to update firmware	yes
Max. number of third-party meters	3
Max. line length	1000 m
Protocol interfaces	RS485, Current Loop
Manipulation contact	1 between terminal cover and housing for the detection of whether the terminal cover has been removed.
Degree of protection	IP54
Connection terminals	<ul style="list-style-type: none"> <li>• 6 mm<sup>2</sup> for power supply</li> <li>• 4 mm<sup>2</sup> for communication module</li> </ul>

## Protection against contact, dust and water

	Types, Values, Ranges, Settings	Product Standard
Degree of protection	IP 54	IEC 62052-21

## Mechanics

Mechanics	Types, Values, Ranges, Settings
Mechanical design of the device	Housing according to DIN 43857
Weight	approx. 450 g
Dimensions (WxHxD)	105 x 170 x 80 mm
Tightening torque of the sealing screw	The sealing screws are tightened with 0.3 Nm and afterwards turned back so far, until the cross hole is in the direction of the sealing-wire lead-through. (<1/2 revolution)

## Climatic Environmental Conditions

Parameter		Range	Testing Standard	Product Standard
Temperature min. (device environment)		-25°C		EN 62052-21
Temperature max. (device environment)		+55°C		EN 62052-21
Relative air humidity		<=95%		EN 62052-21
Dry heat <sup>1)</sup>	72 h	70°C	IEC 680068-2-2	EN 62052-21
Cold <sup>1)</sup>	72 h	-25°C	IEC 680068-2-1	EN 62052-21
Moisture heat <sup>1)</sup>	72 h	40°C	IEC 680068-2-78	EN 62052-21
Heating		25°C		EN 62052-21

<sup>1)</sup>... not in operation

## Mechanical Environmental Conditions

### Not in operation, without packing

Parameter		Values	Testing Standard	Product Std.
Spring hammer		0.2 J	IEC 60068-2-75	IEC 62052-21
Oscillation 10...60 Hz		0.075 mm	IEC 60068-2-6	IEC 62052-21
Oscillation 60 150 Hz		1 g	IEC 60068-2-6	IEC 62052-21
Surge 18 ms		30 g	IEC 60068-2-27	IEC 62052-21
Heat and fire, 30 s			IEC 60695-2-11	IEC 62052-21
	Terminals	960°C		
	Housing	650°C		



## Electrical Ambient Conditions

### Immunity / EMC

Parameter		Value	Testing Standard	Product Standard
Nominal voltage AC		230 V		IEC 62052-21
Voltage tolerance AC		-20 / +15 %		IEC 62052-21
Immunity against discharge of static electricity (ESD)		15 kV-L	IEC 61000-4-2	IEC 62052-21
Immunity against electromagnetic fields amplitude modulated	I = In I = 0	10 V/m 30 V/m <sup>3)</sup>	IEC 61000-4-3	IEC 62052-21 IEC 62052-21
Immunity against electromagnetic fields pulse modulated		10 V/m	IEC 61000-4-3	
Immunity against electromagnetic fields 50Hz	continuous	100 A/m	IEC 61000-4-8	
Immunity against electromagnetic fields 50Hz	Short-term disturbance	300 A/m	IEC 61000-4-8	
Fast transient disturbance	common	4 kV <sup>4)</sup>	IEC 61000-4-4	IEC 62052-21
Impulse voltage 1.2/50 µs	normal <sup>1)</sup>	4 kV	IEC 61000-4-5	IEC 62052-21
Immunity against induced HF voltage	common normal	10 V <sup>2)</sup> 134/66 dBµV	IEC 61000-4-6	IEC 62052-21
Radio interference voltage - quasi peak value		class B	CISPR 22	IEC 62052-21
Radio interference voltage - mean value		class B	CISPR 22	IEC 62052-21
Disturbance voltage DLC	Bandwidth (Broadband)	>5 kHz	EN 50065-1	
	30 kHz (95 kHz)	5 V <sub>PK</sub>		
	Disturbance voltage (out BW)	see <sup>5)</sup>		
Device impedance (receive/transmit)	3 kHz 9 kHz	≥10 Ω/arbitrary		
	9 kHz ... 95 kHz (in BW)	≥50 Ω/arbitrary		
	9 kHz ... 95 kHz (out BW)	arbitr./arb.		
	95 kHz ... 148.5 kHz	>5 Ω / >3 Ω		

<sup>1)</sup> only in differential mode (line to line), acc. to IEC 62052-11, chap. 7.5.6.

<sup>2)</sup> for DLC-communication at levels between 3 V/m and 10 V/m the evaluation criterion B (acc. to EN 50065-2-3) has to be applied.

<sup>3)</sup> for DLC-communication at levels between 10 V/m and 30 V/m the evaluation criterion B (acc. to EN 50065-2-3) has to be applied.

<sup>4)</sup> peak voltage acc. to EN 50065-2-3 (2 kV) is exceeded

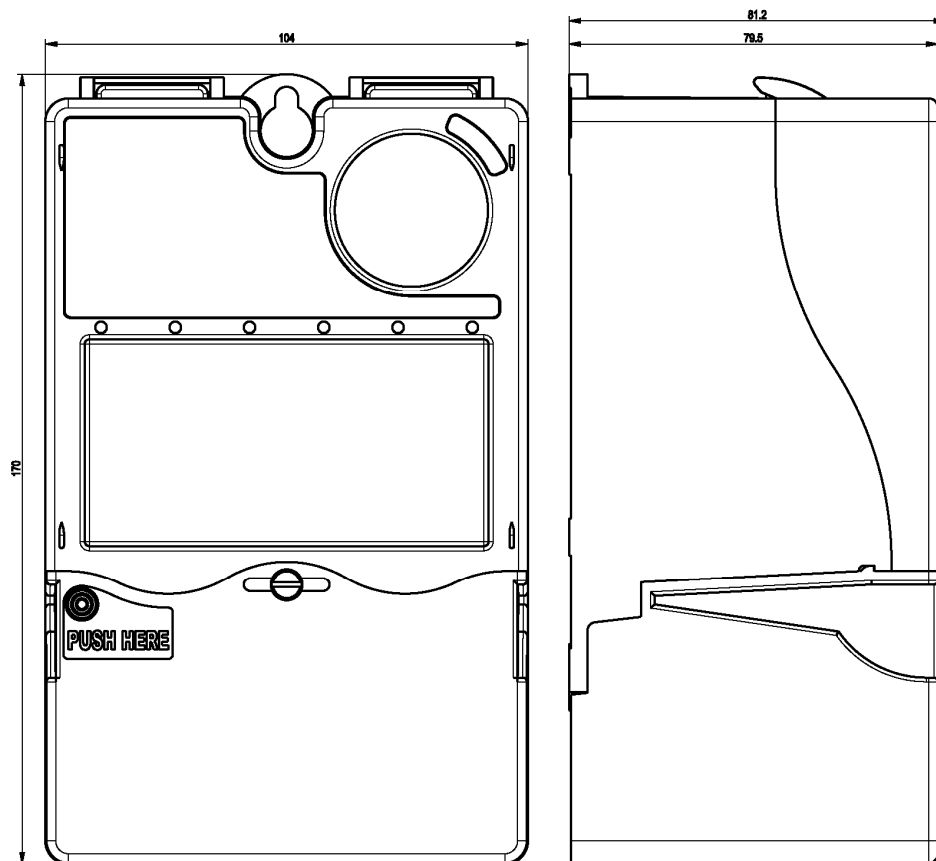
<sup>5)</sup> limiting values for surge voltage acc. to EN 50065-1

## Insulation

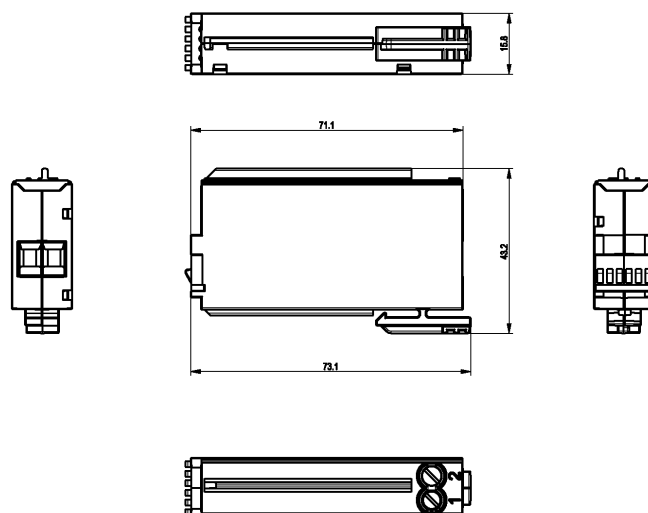
Parameter	Value	Note
Protection class	2	
Peripheral voltage circuits	$U_N \leq 40V_{\text{eff}}$	These circuits are dimensioned as <u>secondary circuits</u> (cabling inside buildings)
	$40V_{\text{eff}} < U_N \leq 230/400V_{\text{eff}}$	These circuits are dimensioned as <u>primary circuits</u> (network cabling, no insulating transformer required, cabling outside buildings)
Overtoltage category	IV	according to VDE110, Tab.1 The value is to be ensured with high-voltage fuse.
Degree of pollution	2	within the device (protection against ingress of moisture and dirt)
	3	at the terminal (open, within the control cabinet)
Insulation material	IIIa	(Printed circuit board $175 \leq CTI \leq 400$ )
Insulation degree	Streng. Insulation	L1, N towards - earth - touchable parts (slots in the housing) - against circuits with $<40V_{\text{eff}}$
	Operation Insulation	within current circuits (L1 and N)

Parameter	Value	Testing Standard	Product Standard
AC-Test	4 kV		IEC 62052-21
Protection class	2		
Isolation surge voltage 1,2/50 $\mu$ s	common	6 kV	IEC 60060-1 IEC 62052-21
Clearance / creeping distance	amplified insulation	5.5/6.3 mm	IEC 62052-21
Clearance / creeping distance	Operation insulation		
Clearance	Surge 4 kV	3.0 mm	IEC 60664
Creeping distance	400 VAC	2.0 mm	
	230 VAC	1.0 mm	

## Dimensional Drawings TD-3530



## Dimensional Drawings TD-3538, TD-3539



## Literature

Brochure AMIS	E50001-U330-A186
Data Sheet AMIS Meter TD-351x/EMVK30/EMAS30	M23-050-1
Data Sheet AMIS Data Concentrator CP-341x/CPC30	M23-051-1
Data Sheet AMIS Power Supply Module PS-3460	M23-052-1
Data Sheet AMIS Load-Switching Device TD-3520/TASU30	M23-053-1
Data Sheet AMIS Meters Protocol Converter TD-3530/TACU30	M23-054-1
Data Sheet AMIS Expansion Module MT-3621	M23-016-1
AMIS Ordering Code	D23-039-1

### Disclaimer of Liability

Although we have carefully checked the contents of this publication for conformity with the hardware and software described, we cannot guarantee complete conformity since errors cannot be excluded. The information provided in this manual is checked at regular intervals and any corrections that might become necessary are included in the next releases. Any suggestions for improvement are welcome.

Subject to change without prior notice.  
Document Label:  
AMIS-DSTD3530TACU30-ENG\_V1.03  
Issuing date  
xx.07.2010

### Copyright

Copyright © Siemens AG 2010  
The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.