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## SITRANS FUE950 energy calculator

## Overview



SITRANS FUE950 is a universal thermal energy calculator, which meets the requirements EN 1434 and has the MID and PTB K7.2 approval for energy metering with the media water.

SITRANS FUE950 has been developed for the SITRANS FUS380/FUE380 and alternatively MAG 5000/6000 or FST020. SITRANS FUE950 is modular in construction and can by order be fitted with optional modules depending on the application. The FUE950 supports none of the SITRANS FX, FC products and only some of the FUS clamp-on products.

## Benefits

## Basic functions

- Prepared for heating, cooling measurement
- Approval for MID for heat metering and PTB K7.2 for cooling
- High-accuracy thermal energy metering, meets EN1434 requirements
- Measured temperature range -20 ... +190 °C (-4 ... +374 °F)
- Instantaneous values for energy/volume flow
- Battery or mains powered
- Battery version with battery lifetime of typically up to 10 years
- Optical data interface
- · Real date and time
- Auto-detection of 2-wire or 4-wire temperature sensors

## Additional functions

- · Individual tariff functions
- Advanced functions for cooling/heating applications or the combination
- Memory for 24 periods (months, weeks, days)
- Data logger function
- Expandable functionality with 2 optional plug and play add-on modules
- Communication over M-Bus, RS 485 or RS 232

## Add-on modules

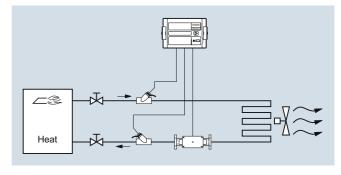
- Plug-in module with 2 extra pulse inputs
- Plug-in module with 2 pulse outputs
- Plug-in module with combination of input and output pulses
- Plug-in module for M-Bus communication
- Plug-in module for RS 232 or RS 485 communication
- Plug-in module with 2 passive current outputs (4 ... 20 mA)

## Application

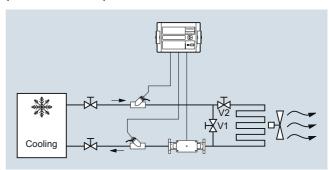
The SITRANS FUE950 is able to handle 3 kinds of applications, means energy calculation in:

- District heating applications
- Chilled water applications
- Combined cooling/heating applications

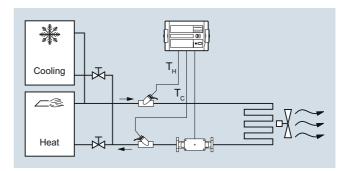
# Energy metering in heating, hot water applications (code "A" and "B")



# Energy metering in cooling, chilled water applications (code "C" and "D")



# Energy metering in combined cooling/heating applications (code "E" and "F")



## SITRANS FUE950 energy calculator

## Design

SITRANS FUE950 has an easy-read 8-digit LCD display with associated pictograms for the various functions. As the display has been made for several applications, some figures/symbols not used for normal district heating applications will be shown.

SITRANS FUE950 has a push button for simple operation and provides user-friendly control via the various display menu loops. The display will always be configured for the application chosen, and for the selected display settings.

The integrator has an IP54 plastic housing and is designed for wall or panel mounting. The housing comes with prepared rubber gaskets cable entries for fast and easy installation.

## Operation menu loop structure

The FUE950 display has six menu loops and the menus are numbered in the display from 1 to 6. Some display menus consist of two values (to maximum seven) that are shown alternately at 4-second intervals.

The main menu loop no. 1 with the current data, e.g. for energy, volume, flow rate and temperature, is preprogrammed as default setting.

In the combined heating/cooling configuration the menu loop no. 5 (tariff menu loop) will be activated additionally.

## Display and output pulses

Units: MWh, GJ, Gcal, MBtu,  $m^3$ , gal,  $m^3$ /h, GPM, °C, °F and kW; all decimal points are statically (the unit "gal" is shown with factor x 100).

The display unit and the last fractional digit are typical used for the pulse outputs.

## Function

## Technical principle

Calculation of energy is based on the following formula:

 $\label{eq:energy} \text{Energy} = \text{Volume} \; x \; (T_{Hot} \text{ - } T_{Cold}) \; x \; K_{factor} \; (T_i)$ 

Volume: Volume [m<sup>3</sup>] of a given amount of volume pulses

T<sub>Hot</sub>: Measured temperature in the hot line

T<sub>Cold</sub>: Measured temperature in the cold line

 $K_{factor}$   $(T_i)$ : Thermal coefficient of media enthalpy and heat content

The energy calculation is made by a counter and depends on temperature difference, pulse input frequency and legal requirements

The calculator always carries out at least one energy calculation every 2 seconds. If the connected flowmeter has not sent enough pulses the energy calculation and flow indication is also based on the 8 seconds value.

## Data memory

The FUE950 has a history memory of 24 periods (months, weeks, days). The following values are stored monthly, weekly or daily in the EEPROM on the programmed day of 1...31 (via software tool).

- Date/Time
- Energy
- Tariff energy 1
- · ramil energy i
- Tariff energy 2
- Tariff definition 1Tariff definition 2
- Tariff definition 2
- Pulse counter input 1
- Operation hours

- Volume
- Error day counter
- Maximum monthly flow rate
- Maximum monthly power
- Date of maximum monthly flow rate
- Date of maximum monthly power
- Pulse counter input 2

## Data logger memory (LOG)

The LOG of the calculator is stored every 24 hours with all cumulative values in the EEPROM. The storage frequency can be selected from various storage intervals (5, 6, 10, 12, 15, 20, 30, 60 minutes or the default setting of 24 hours). The data which are stored in the LOG could be read out using a software tool and can be used for evaluations.

## Extract of possible LOG settings

Extract or poss	sible LOG settings		
Storage interval	Values	Number of data records	Recording period
5 minutes	• Error status	440	36.6 hours
15 minutes	<ul> <li>Overload time temperature</li> </ul>	440	110 hours
1 hour	Overload time flow	440	18.3 days
24 hours (default setting)	rate Forward temperature Forward temperature Date and time Energy Tariff energy 1 Tariff energy 2 Tariff definition 1 Tariff definition 2 Volume Error day counter	440	440 days

#### Maximal Values

The integrator creates max. values for power and flow rate based on consumption time, which are stored in the EEPROM. The integration intervals are adjustable to 6, 15, 30 or 60 minutes and 24h. Default setting is 60 minutes.

## Tariff/Accounting date function

The calculator includes two independent memories in which the accumulated energy at two programmable tariff dates are stored.

- · Last accounting date
- Last but one accounting date

## Values stored

- Energy
- Volume
- Tariff counter 1
- Tariff counter 2
- Pulse counter 1
- Pulse counter 2
- Date

The integrator offers two optional tariff memories for monitoring plant load states. Here it concerns threshold value tariffs. Extensive tariff conditions make it possible to adapt the calculator individually to the required customer-specific applications.

Both tariffs are separately configurable and independent from each other. Energy or time can be measured alternatively per tariff register dependent on the tariff mode adjusted in each case.

With the "time triggered tariff function" the switch-on time and the switch-off time are adjustable independent from each other for each day of the week in steps of 15 minutes.

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The following tariff limit types of the tariff function are possible: (This example applies to the display at 1 fractional digits after comma)

Туре	Description	Limit	Limit resolution
dT	Temperature difference	1 190 °C	1 °C
-dT	Negative temperature difference	1 190 °C	1 °C
TR	Return temperature (low)	1 190 °C	1 °C
TV	Forward temperature (high)	1 190 °C	1 °C
Р	Power	10 2 500 kW	10 kW
Q	Flow	1 255 m <sup>3</sup> /h	1 m <sup>3</sup> /h
FE	"Theoretically forward energy" with return temperature of 0 °C		
Ζ	"Time triggered" counting energy		
Е	"External" counting energy		

## Error handling and memory

Events such as changes and faults are stored in a non-volatile memory with a capacity of up to 127 entries. The following events are recorded:

- Checksum error
- Temperature measurement error
- Error hours
- · Start and end of test mode

If SITRANS FUE950 records an error, this will be automatically indicated by a "alarm symbol" on the display.

To protect the reading data, all the relevant data are saved in a non-volatile memory (EEPROM). This memory saves the measured values, device parameters and types of error at regular intervals.

The following events are recorded:

- Temperature sensor error
- Swapped hot and cold temperature sensors
- · Battery low warning
- Power supply failure
- · Optical communication warning
- RAM checksum error

## Outputs/Inputs/Communication

## Communication interfaces:

SITRANS FUE950 is fitted with an optical infra-red send/receive port in accordance with EN1434/IEC 61107, protocol standard, EN 1434/EN 60870-3 (M-Bus protocol).

A specific optical head with a permanent magnet (IrDA-adapter) in accordance with EN 1434 can be used for readout data or communication with the parameterization software.

## 2 ports for optionally plug-in modules

The calculator features 2 ports for the plug-in modules.

One slot is for the function modules and the other for the communication modules.

## Communication modules

The following communication modules are available as options: RS 232 module, RS 485 module and M-Bus module. The RS 232 and RS 485 communication modules are serial interfaces and permit data exchange with the calculator. For this purpose a special data cable is necessary.

The M-Bus module is a serial interface for communication with external devices (M-Bus Master/Centre). According to the M-Bus structure a number of calculators can be connected to a control centre.

## Pulse input module

Two pulse inputs are available. The pulse value and the unit is configurable for energy, water, gas or electrical meter by parameterization software. Data are separate cumulated in different registers and are also stored on the two accounting day's (Tariff registers).

## Combined Pulse Input/Output module

Two pulse inputs combined with one pulse output are available on one module. The pulse inputs are configurable with value and the unit by parameterization software.

The pulse output is also programmable using the parameterization software.

#### Pulse output

The calculator provides levels for two optional external pulse outputs, which can be freely programmed using the parameterization software tool.

Default setting is one pulse which occurs per change in the least significant digit in the display with the unit and resolution selected by the device ordering.

Possible pulse output values

- Energy (default setting)
- Volume (default setting)
- Tariff energy 1
- Tariff energy 2
- Tariff condition 1, limit switch
- Tariff condition 2, limit switch
- Energy error
- Volume error
- Volume with specific resolution (0.1, 1.0, 10 or 100)
- Energy with specific resolution (0.1, 1.0, 10 or 100)

## Combined current output module

Optional module with 2 passive 4 ... 20 mA outputs.

Possible output values:

- Power (default setting for output #1)
- Flow (default setting for output #2)
- Hot, cold or difference temperature

The settings can be configured by parameterization software. The current output module occupies both ports, means no other plug-in module will possible to plug in.

## Module combinations

The calculator has a group of extension modules for communication and another group of extension modules for additional functionality. These modules are available first selected within the calculator, or for retrofitting in the field.

One single function module as well as one single communication module out of following modules is selectable.

Function modules:

- Pulse input module, 2 inputs
- Pulse output module, 2 outputs
- Combined pulse module 2 inputs, 1 output
- Combined current output module, 2 x passive 4 ... 20 mA (occupies both ports)

Communication modules:

- M-Bus (M-Bus protocol according EN 1434-3)
- RS 232 (M-Bus protocol according EN 1434-3)
- RS 485 (M-Bus protocol according EN 1434-3)

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tion via separate IrDA-adapter baud rate: 300 or 2400

## Integration

SITRANS FUE950 is a multi-purpose energy calculator for media water which meets the requirements of EN 1434. Further, the energy calculator has been specially developed to process volume pulses from SITRANS FUS380/FUE380 or alternatively MAG 5000/6000 or FST020 transmitter.

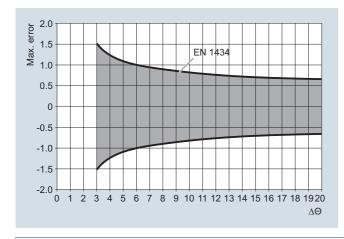
Technical specifications	
Approval	MID approved in accordance with energy meter EN 1434 and PTB K7.2 (German national cooling approval)
Approved temperature range	
Heating	0 180 °C (32 356 °F)
• Cooling	0 105 °C (32 221 °F)
Absolute temperature range	-20 +190 °C (-4374 °F)
Differential temperature	
Heating	3 177 K (starting at 0.1 K)
• Cooling	3 102 K
Measuring accuracy	Meets requirements of EN 1434 Typically max. $\pm$ (0.5 + 3K/ $\Delta\Theta$ ) [%] of measured value
Measuring rates	
Battery type D-cell	Volume: 1 s, temperature: 4 s
Mains versions	Volume: 1/8 s, temperature: 2 s

Power range value

Flow range

Depends on pul (IN0), see "Selecting data".	
Depends on puls follows:	se input value as
Pulse input value (I/P or gal/P)	Max power [kW]
1	15 000
2.5	15 000
5	15 000
10	150 000
25	150 000
50	150 000
100	1 500 000
250 *)	1 500 000
500 *)	1 500 000
1 000 *)	15 000 000
*) not available for	or gal/pulse

## Typical accuracy of FUE950



#### User interface (always included) 8-digit LCD display with associ-Display ated pictograms/symbols MWh, GJ, Gcal, MBtu, m³, m³/h, GPM, gal, °C, °F, kW, MBtu/h Units (gal is shown with factor x 100) Totalizer value range 99 999 999 or 9 999 999.9 (0 and 1 digit after comma). Display digits: Flow in 6 digits; Volume, power and energy in 8 digits Power, energy, volume, flow rate, Values temperatures Single push button for the menu controlling Push button Optical interface ZVEI optical interface with M-Bus protocol as per EN 1434, connec-

## Rated operation conditions

IrDA interface

Enclosure	IP54 in accordance with IEC 529
Material	
Housing	C Lexan 141R (or similar); colors: light gray (top part) and black (bottom part)
Pipe/wall fitting	PA 6.6 GF25 (or similar)
Other plastic parts	ABS Cycolac GPM500 (or similar)
Gaskets	Neoprene and rubber cable bushings: EPDM 50

Temperature

• Rubber cable bushings

 Ambient 5 ... 55 °C (41 ... 131 °F) -25 ... +70 °C (-13 ... +158 °F) Storage Relative ambient humidity < 93 %

EPDM 50

M1/M2

Environment class • Mechanic class

• Electromagnetic class E1/E2 (MID) or C (DIN EN 1434)

Temperature input (always included)

The temperature sensors must be connected to terminals 1-5 and **Function** 6-2 (TH) and 3-7 and 8-4 (TC) depending on cable type (2-wire or 4-wire)

Temperature range Absolute measuring range Temperature difference Measurement cut-off

-20 ... 190 °C (-4 ... 374 °F) for T<sub>H</sub> and T<sub>C</sub> Start 0.1 K, min. 3 K, max. 177 K

16-bit digital resolution AD con-

Display resolution  $T_H$  and  $T_C{:}~0.1~K$  ,  $\Delta T{:}~0.1~K$ Sensor types Pt100 or Pt500 as 2-wire or 4wire; Standard is Pt500. Sensor cable length: up to 10 m (according EN 1434 and MIDtype approval).

Sensor connection

4-wire or 2-wire; auto detection of connection version

## Flow input (IN0) (always included)

**Function** 

Used as standard for flow input of the external flowmeter. The input is marked as 10 (+ Flow Pulse), 11 (- Gnd) on the terminal strip. Note: The pulse input value selection must be the same as the pulse output setting of the flow-

meter.

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Pulse value	1 1 000 l/pulse or 1 100 gal/pulse, selection by corre- sponding Order code. Will be	Possible pulse output selection	<ul><li>Energy (default setting for 'Out1')</li><li>Volume</li></ul>
5.4.6	shown at the device label		(default setting for 'Out2')
Pulse frequency	≤ 100 Hz (200 Hz)		Tariff energy 1
Pulse ON-time	≥ 3 ms		<ul><li>Tariff energy 2</li><li>Tariff condition 1 (limit switch)</li></ul>
Pulse OFF-time	≥ 2 ms		Tariff condition 2 (limit switch)
Type	Active pulse input		• Energy error
Terminal voltage	3.6 V DC (supplied internally by FUE950)		Volume error
Flowmeter installation place	The flowmeter installation place can be in the hot line or cold line ("forward or return pipe") selected by corresponding Order code. The "installation place" will be		<ul> <li>Volume with specific display resolution (or with factor 0, 1, 10 or 100 thereof)</li> <li>Energy with specific display resolution (or factor 0.1 thereof)</li> </ul>
	shown at the device display and nameplate	Pulse input	
Connected cable	Max. 10 m (shielded cables are highly recommended)	Function	Add-on module for two additional counters. The pulse input 1 is marked as I1, 'gnd' and the input
Ports for option modules			2 as I2, 'gnd' on the terminal strip
Туре	The calculator features 2 ports for optional plug-in modules.		and indicated in the display as separate registers IN1 and IN2 and can also be transferred via
Function modules (Port 1 or 2)	<ul> <li>Pulse input module, 2 inputs (In1, In2)</li> </ul>	_	the communication modules.
	Pulse output module, 2 outputs (Out1, Out2)	Туре	Passive "open collector" pulse inputs, outputs not potential isolated to each other, data are sep-
	Combination module of 2 inputs (In1, In2) and 1 output (Out1)		arate cumulated in different registers and are also stored on the two accounting day's.
Current output module (Port 1)	2 passive 4 20 mA (#1, #2) (occupies both port 1 and 2)	Pulse value	Pulse value and the unit are configurable for energy, water, gas or
Communication modules (Port 1 or 2)	M-Bus, RS 232 or RS 485 (M-Bus protocol, according EN 1434-3)		electrical meter by a software tool Default: Pulse input 0.1 m <sup>3</sup> or 1 gal (if unit 'gal' is ordered with
Pulse output	T		the Z-option "L05")
Function	The module contains connections for 2 pulse outputs, which can be	Pulse frequency	≤ 8 Hz
	programmed as desired using a	Pulse length	≥ 10 ms
	software tool. The pulse outputs are marked as standard as O1,	External voltage supply	3 V DC (supplied internally by FUE950)
	'gnd' and O2, 'gnd' on the termi- nal strip and Out1 respectively Out2 in the display.	Current	based on $R_i = 2.2 \text{ M}\Omega$
Туре	Passive "open collector" pulse	Cable length	< 10 m connection limit
туре	output, outputs potential isolated to each other	Current output module Function	The module contains connections
Pulse value	Last significant digits of the dis- play (unit/pulse), selection by cor- responding Order code and setting can be read via display menu, settings changeable via software tool		for 2 passive current outputs, which can be programmed individually using the software tool. The outputs are marked "#1" and "#2" with corresponding polarity "+" and "-" on the terminal strip.
Pulse output 1			The module will be connected on
Pulse frequency	≤ 4 Hz		port 1 only, but both ports are occupied by the module.
Pulse width	125 ms ± 10 %	Terminal voltage	External supply: 10 30 V DC
Pulse duration	125 ms ± 10 %		(passive output)
Pulse break	≥125 ms -10 %	Signal range	4 20 mA; 4 mA = 0 value and 20 mA = default maximum values
Pulse output 2			(for #1: Power in kW and for #2:
Pulse frequency	≤ 100 Hz, depending on the selected pulse length		Flow with the max. values and selected unit).  Defaults:
Ratio	Pulse duration/pulse break ~1:1		For power it is the max. selectable
Pulse length	5, 10, 50, 100 ms (default: 5 ms)		value x 100 000 the last digit of
External voltage supply	3 30 V DC		display (e. g. 20 mA = 10 000 kW (1 digit res.) or 100 000 kW
Current	≤ 20 mA with a residual voltage of		(0 digit res).
	≤ 0.5 V		For flow it is the max. selectable value x 10 000 the last digit of display (e. g. 20 mA = 1 000.0 m <sup>3</sup> /h (1 digit res.) or 10 000 m <sup>3</sup> /h (0 digit res.).
			(5 digit 100.).

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Load	Max. 800 Ω	Power consumption		
Upper limit	Up to 20.5 mA (exceed causes	230 V and 24 V versions	Typical current appr. 0.15 VA	
Signal on alarm	the error current value)  Errors are indicated with 3.5 mA or 22.6 mA (programmable, default: 3.5 mA)	3.6 V D-cell battery	Typical battery lifetime 10 years under normal conditions (no addon modules, max. 40 °C ambient temperature)	
Output values	Power, flow, temperature (configuring via software tool; default: for #1: Power and for #2: Flow)	Supply data	Internal voltage 3.6 V by the bat- tery or plug-in power supply mod- ule	
M-Bus output		Battery, 3.6 V type (option)	3.6 V lithium D-cell, battery lifetime typically 16 years with inde-	
Type	The optional M-Bus plug-in mod- ule is a serial interface for com-		pendently powered flowmeter	
	munication with external devices (M-Bus Repeater)	230 V AC module (option)	Plug-in module for 230 V AC (195 253 V AC), 50/60 Hz (incl. battery backup)	
Protocol	M-Bus according EN 1434-3	24 V AC module (ention)	, , ,	
Connection	The connection is not polarity- conscious and is electrically iso- lated, connection of 2 x max.	24 V AC module (option)	Plug-in module for 24 V AC (12 30 V AC) (incl. battery backup)	
	2.5 mm <sup>2</sup> wires, 300 or 2400 baud (auto baud detection), current drawn: one M-Bus load.	Battery backup (option)	Only with mains supply modules by internal 3.0 V lithium battery (type CR 2032)	
	M-Bus address: Each port has its own primary M-Bus address (Prim1 = the last two digits of the serial number; Prim2 = 0). The secondary address is unique for each calcu- lator and is factory-set to equal the serial number.		Displayed values, date and time are still updated, but the measuring functions have stopped, including the flow rate measurement. Communication via optional modules M-Bus, RS 485, RS 232 or optical interface is maintained, affecting the backup battery lifetime.	
RS 232 output		Accessories/Software		
Туре	The optional module RS 232 is a serial interface for data transmis-			
	serial interface for data transmission with external devices, e.g. PC; baud rate: 300 or 2400. The module contains a 3-pole terminal		e based on the M-Bus is a conve- culator. It runs on Windows and is	
	strip with terminals marked 62	<ul> <li>Configuration of the calcula</li> </ul>	tor functionality, reading out differ-	

- ent memories, printing out calculator logs (standard).
- Expert programming of the device (advanced setup).
- Test Lab programming of the device (full setup)

Configuration of the calculator functionality, reading out different memories, printing out calculator logs. For further details please contact your local Siemens representative.

A specific optical head with a permanent magnet in (IrDA adapter with bluetooth) accordance with EN 1434 can be used for programming/altering programming of readout data, configuration data, etc. The reader head can also be used to change measuring data.

## RS 485 output

Function

Protocol

Connection

The optional RS 485 module is a serial interface for data transmission with external devices, e.g. PC; baud rate: 2400. The module contains a 4-pole terminal strip with terminals marked D+, D-, Vcc and GND

(TX), 63 (RX) and 64 (GND). For

this purpose a special data cable

The module contains a 3-pole terminal strip with terminals marked 62, 63, 64 (max. 2.5 mm<sup>2</sup>); Con-

nected cable length: max 10 m;

For communication with a PC a

special adapter cable is required (Article No. A5E02611774).

M-Bus according EN 1434-3

is necessary.

Protocol

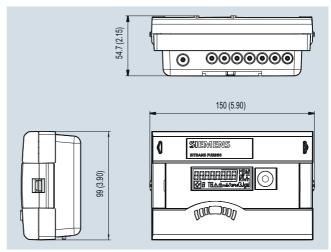
M-Bus protocol according

Connection

Terminals D+ and D-; electrically isolated; 2400 baud only.

An external supply of 12 V DC ± 5 V (<5 W) is needed for the module (terminals Vcc and GND). The module terminals are max. for 2.5 mm<sup>2</sup> wires. Connected cable length: max. 10 m

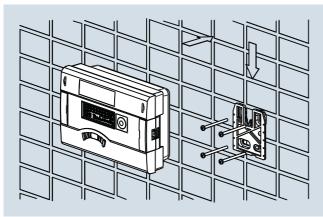
## Dimensional drawings



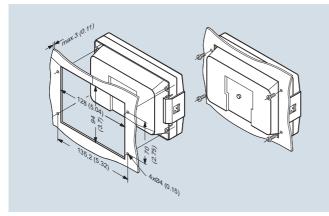
SITRANS FUE950, dimensions in mm (inch)

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## SITRANS FUE950 energy calculator



Wall mounting



Panel mounting, dimensions in mm (inch)

## Pt500 temperature sensor pairs

## Application

The temperature sensor set is designed for use with the Siemens energy calculator type SITRANS FUE950 for measurement of the energy consumption in a district heating or cooling net

Temperature sensors are one of the integral components of every thermal energy meter in heating or cooling applications. They are used for determining temperature changes in fluids due to energy taken from or supplied to the loop. The temperature is thus measured by mounting temperature sensors upstream and downstream from the point where the exchange in the thermal energy of the system is.

To ensure an accurate measurement of the temperature difference according to MID (EN 1434) or PTB K7.2 the sensors are delivered as matched pairs.

By selection with the corresponding Order code the Pt500 sensor pair sets can be delivered with heating approval or with approvals for combined heating/cooling applications.

## Technical specifications

## Temperature sensor pairs:

#### 2-wire Pt500

Measuring insert Pt500 temperature sensor, EN 60751, tolerance class B,

2-wire

Pairing Paired to EN 1434 (10 ... 130 °C/14 ... 266 °F)

0...150 °C (32 ... 302 °F) Media temperature

Response time T<sub>0.5</sub> See sensor pocket specifications

Medium Typically heating water

Pressure rating See sensor pocket specifications

Protection IP65

Pipe material AISI 304Ti/1.4303

Dimension Ø 6 mm Sensor tube length 50 mm

Cable length Up to 10 m (32.8 ft), fixed con-

nected silicon cable, 2 connection wire terminals, terminal sleeves to DIN 46228

#### 4-wire Pt500

## Pt500 4-wire temperature sensor pair (with MID and PTB K7.2 approval)

Measuring insert Pt500 temperature sensor, EN 60751, tolerance class to

ISO 751 Class B; 4-wire Pairing Matched paired according to

EN 1434 at 10, 75 and 140 °C

(50, 167 and 284 °F) Type approval

MID (DE-06-MI004-PTB011) and PTB K7.2 (PTB 22.77/09.01) Only to be mounted with related sensor pockets according to the

type approvals.

0...150 °C (32 ... 302 °F) Media temperature

Permissible temp. pair range for ΔT

3 ... 150 K Heating Cooling 3 ... 85 K

Medium Approved for heating/cooling

water

IP65 Protection

Environment

 Mechanic class M3

• Electromagnetic class E1 (MID)

Pressure rating See sensor pocket specifications

Material

Stainless steel AISI 304Ti/1.4571 • Protective tube

(or similar), diameter of protec-

tive tube: 6 mm

• Connector cable Silicon cable, 4 connection wire

terminals, terminal sleeves to

DIN 46228

Sensor tube length 140 or 230 mm

(5.51 or 9.06 inch)

5 m (16.4 ft), fixed connected Cable length

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## Sensor pockets

## Stainless steel sensor pocket (for 4-wire Pt500 types only - standard)

Media temperature 0 ... 150 °C (32 ... 302 °F)

Approval Approved only together with 4-wire sensors

Medium Approved for heating/cooling water; up to max.

5 m/s flow velocity

Pressure rating PN 40

Length Face-to-face length 120/135 and 210/225 mm

(4.72"/5.23" and 8.27"/8.86")

External diameter Protective tube 8/11 mm (0.32"/0.43")

Internal diameter Protective tube 6 mm (0.24")

Pipe connection Thread G 1/2" (with sealing screw for sensor)

Material Protective tube AISI 316Ti/1.4571 (or similar)

Use Use with related 4-wire Pt500 sensors only

 Use with related 4-wire Pt500 sensors only (according type approval)

• For flow velocities up to 5 m/s

 Recommended to install with welded sleeve (according to EU standard)

# Stainless steel sensor pocket (for 2-wire Pt500 types only - some only available as spare part)

 $\begin{array}{ll} \mbox{Media temperature} & \mbox{0 ... 180 °C (32 ... 356 °F)} \\ \mbox{Medium} & \mbox{Approved for heating water} \end{array}$ 

Response time  $T_{0.5}$  Typically 13 s at 0.4 m/s without pasta

Typically 5 s at 0.4 m/s with pasta

Pressure rating PN 25

Length L1 (mm) 92 127 168 223 L (mm) 82 117 155 210

Material Stainless steel: AISI 316Ti/1.4571
Use For 2-wire Pt500 types only

# Brass sensor pocket (for 2-wire Pt500 types only - some only available as spare part)

Media temperature 0 ... 150 °C (32 ... 302 °F)

Medium Approved for heating water

Response time  $T_{0.5}$  Typically 9 s at 0.4 m/s without pasta

Typically 5 s at 0.4 m/s with pasta

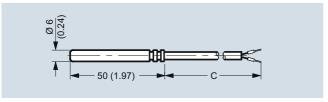
Pressure rating PN 16

Length L1 (mm) 47 92 127 L (mm) 40 82 117

## Dimensional drawings

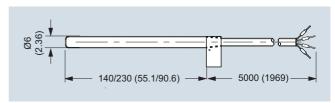
## Pt500 2-wire temperature sensor pair (EN 1434)

Cable length 2, 3, 5 or 10 m ('C' at the dimensional drawing)



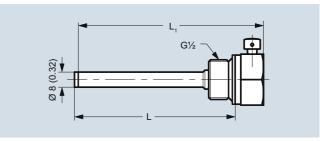
Pt500 2-wire temperature sensor, dimensions in mm (inch)

## Pt500 4-wire temperature sensor pair (with MID and PTB K7.2 approval)



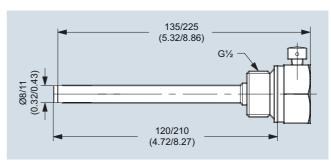
Pt500 4-wire temperature sensor, dimensions in mm (inch)

# Stainless steel sensor pocket (for 2-wire Pt500 types only) Length L1 (mm) 92 127 168 223 L (mm) 82 117 155 210



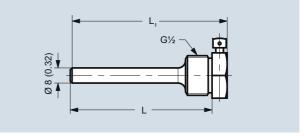
Sensor pocket (for 2-wire Pt500 types only), stainless steel, dimensions in mm (inch)

## Stainless steel sensor pocket (for 4-wire Pt500 types only)



Stainless steel sensor pocket, dimensions in mm (inch)

Brass senso	r pocket (for 2-	wire Pt500 ty	pes only)	
Length	L1 (mm)	47	92	127
	L (mm)	40	82	117



Sensor pocket, brass (for 2-wire Pt500 types only), dimensions in mm (inch)

SITRANS F US Inline

## SITRANS FUE950 energy calculator

A 7 NE3 18 0 - ■ A Click on the Article No. Of the comine configuration in the PIAL Life Cycle Portal.  Plow input setting (NN) The puble input value selection must be the same at the puble output setting of the selected flowmeter. To got optimal function and performance the puble value must be oelected as low as possible according to the maximum bor rate.  The puble input in the PIAL Life Cycle Portal P	Selection and Ord				Article No.		r code
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The pulse input value selection must be the same as the pulse output setting of the selected flowmenter. To get optimized function and performance the pulse value must be selected as low as possible according. The following calculation formula can be used for determining the lowest pulse value at a pulse length of present pulse. The following calculation formula can be used for determining the lowest pulse value at a pulse length of present pulse. The pulse value must be 1 (pulse). The pulse is 2000-2000-2000-2000-2000-2000-2000-200			online configuration in the PIA Life Cycle Portai.				
Pulse input in flyulish or in alphosite with option   Comman in m <sup>2</sup> /h (with option L05)	The pulse input va To get optimal functo the maximum flo The following calc 5 ms: L/pulse > Q For example Q <sub>max</sub>	ulue selection muction and perfor ow rate. ulation formula o may (m <sup>3</sup> /h)/360.	mance the pulse value must be selected as low as possible according can be used for determining the lowest pulse value at a pulse length of				I
2.5	Pulse input in l/pulse or in gal/pulse (with option L05)	Q <sub>max</sub> in m <sup>3</sup> /h	in GPM *) (with option L05)				ı
S							
10   3 600   60 000   50 000   38 A   55   8 000   150 000   36 C   60   18 000   30 000   4 A   60   60 000   60							
25							
50   18 000   36 000   600 000   4 A A 250   90 000   600 000   4 A A 250   90 000   600 000   4 C   500   180 000   4 C   500   180 000   5 C   500   180 000   5 C   5 A 5 C   5 C							
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1000   380 000   1   1   1   1   1   1   1   1							
1 000	250	90 000	-		4 B		
') GPM = Gallons per minute  Calculator application/Flowmeter installation place For heating, flowmeter in return pipe (cold pipe), typical standard For heating, flowmeter in forward pipe (hot pipe) For cooling, media water, flowmeter in forward pipe (cold pipe) For cooling, media water, flowmeter in forward pipe (cold pipe) For cooling, media water, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For cooling, and For search pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approval conly alid if temp, sensors are used with the applicable temperature sensor diameter and 250 mm length, with MID approval (conly for use with the applicable temperature sensor diameter and 50 mm length, with MID approval (conly for use with the applicable temperature sensor diameter and 50 mm length, with MID approval (conly for use	500	180 000	-		4 C		
Calculator application/Flowmeter installation place For heating, flowmeter in return pipe (cold pipe), typical standard For heating, flowmeter in forward pipe (hot pipe) For cooling, media water, flowmeter in forward pipe (hot pipe) For cooling, media water, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating)  For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in forward pipe (and pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe) For combined cooling/heating, flowmeter in return			-		5 A		
For heating, flowmeter in return pipe (cold pipe), typical standard For heating, flowmeter in forward pipe (hot pipe) B For cooling, media water, flowmeter in forward pipe (hot pipe) For cooling, media water, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating)  Temperature sensor type Pi500 setup, no sensor pair included (standard) Pi500 setup, no sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). Pi500 setup and Pi500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). Pi500 setup and Pi500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  Pi500 setup and Pi500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  Stainless steel pockets (standard)  Pi501 setup and Pi500 sensor pair (6/50 mm), 2-wire type i	*) GPM = Gallons	per minute	'				
For heating, flowmeter in forward pipe (hot pipe) For cooling, media water, flowmeter in ferum pipe (hot pipe) For cooling, media water, flowmeter in forward pipe (cold pipe) For cooling, media water, flowmeter in forward pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating)  Temperature sensor type P1500 setup, no sensor pair included (standard) P1500 setup, no sensor pair included (standard) P1500 setup, no sensor pair included (standard) P1500 setup and P1500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-M1004-P178011, P18 approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). P1500 setup and P1500 sensor pair (6/20 mm), 2-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-M1004-P178011, P18 approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). P1500 setup and P1500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets) P1500 setup and P1500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter) No pockets (standard) Brass pockets fests: (for 6 mm sensor diameter) No pockets (standard) Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 40 and max. 5 m/s (2 pcs.) for 140 mm 4-wire sensors above) Stainless steel pocket, 210/135 mm length for 6 mm sensor diameter, max. PN 40 and	Calculator applic	ation/Flowmete	r installation place				
For cooling, media water, flowmeter in forward pipe (cold pipe) For cooling, media water, flowmeter in return pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating)  Temperature sensor type Pi500 setup, no sensor pair included (standard) Pi500 setup, and Pi500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory sets report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). Pi500 setup and Pi500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory sensor pair sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory sensors prockets). Pi500 setup and Pi500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pi 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter) No pockets (standard)  Temperature sensor pocket sets: (for 6 mm sensor diameter) No pockets (standard)  Temperature sensor sets sets pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors above) Stainless steel pockets for 6 mm 2-wire sensors above) Stainless steel pockets for 6 mm 2-wire sensors above) Stainless steel pockets for 6 mm 2-wire sensor	For heating, flowm	eter in return pi	pe (cold pipe), typical standard		A		
For cooling, media water, flowmeter in return pipe (hot pipe) For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating, flowmeter in return pipe (cold pipe as heating) For Combined cooling/heating) For Combined capture sensor pair included For Combined capture sensor of diameter and so constant the pipe (cold pipe as heating) For Combined capture sensor pair (cold pipe as heating) For Combined capture sensor pair (cold pipe as heating) For Cold pipe (cold pipe as heating) For Cold pipe (cold pipe as heating) For Cold pipe (cold pipe as heating) For Cold	For heating, flowm	eter in forward	pipe (hot pipe)		В		
For combined cooling/heating, flowmeter in forward pipe (hot pipe as heating) (MID conformity declaration for heating)  For combined cooling/heating, flowmeter in return pipe (cold pipe as heating) (MID conformity declaration for heating)  Temperature sensor type  Pi500 setup, no sensor pair included (standard)  Pi500 setup and Pi500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MID04-PTB011, PTB approved 22.77/99.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pi500 setup and Pi500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MID04-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pi100 setup, no sensor pair included  \$5 Pt 1500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets).  Pi500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets).  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Practice of the machine sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm and the sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors, length 155/168 mm, G½ inch, max. PN 25 (2 pcs.)  Voltage supply  Battery 3.6 V DC (Lititum D-cell type) (standard)  Mains power module for 230 V AC supply (in	For cooling, media	a water, flowmete	er in forward pipe (cold pipe)		C		
(MID conformity declaration for heating)  For combined cooling/heating, flowmeter in return pipe (cold pipe as heating)  (MID conformity declaration for heating)  Temperature sensor type  Pi500 setup, no sensor pair included (standard)  Pi500 setup, and Pi500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pi500 setup and Pi500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pi500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pi 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pi 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Brass pockets for 6 mm 2-wire sensors above)  Stainless steel pocket for 6 mm 2-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  6 Stainless steel pockets for 6 mm 2-wire sensors, length 155/168 mm, G½ inch, max. PN 25 (2 pcs.)  8 Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)	For cooling, media	a water, flowmete	er in return pipe (hot pipe)		D		
For combined cooling/heating, flowmeter in return pipe (cold pipe as heating)  (MID conformity declaration for heating)  Temperature sensor type  Pt500 setup, no sensor pair included (standard)  Pt500 setup and Pt500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length, MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt500 setup and Pt500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt500 setup and pt500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pt 500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Temperature sensor pocket sets: (for 6 mm sensor diameter, max. PN 40 and max. 5 m/s  (2 pcs. for 140 mm 4-wire sensors above)  Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s  (2 pcs. for 130 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  8 Voltage supply  Battery 3.6 V DC (Littum D-cell type) (standard)  Mains power module for 23 V AC supply (incl. back-up battery)  Mains power module for 23 V AC supply (incl. back-up battery)	For combined coo	ling/heating, flo	wmeter in forward pipe (hot pipe as heating)		E		
MID conformity declaration for heating   Temperature sensor type	(MID conformity de	eclaration for he	ating)				
Pt500 setup, no sensor pair included (standard) Pt500 setup and Pt500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). Pt500 setup and Pt500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets). Pt100 setup, no sensor pair included Pt500 sensor pair included Pt500 sensor pair included Pt500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets) Pt 500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm) sensor diameter) No pockets (standard)  Brass pockets (standard)  Brass pockets (standard)  Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  Stainless steel pocket, 210/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (2 pcs. for 140 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors, length 115/168 mm, G½ inch, max. PN 25 (2 pcs.)  8 Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  3 a					F		
Pt500 setup and Pt500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt500 setup and Pt500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt100 setup, no sensor pair included  Pt 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pt 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  Pt sensor pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s  (2 pcs. for 140 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pockets for 6 mm 2-wire sensors, length 1155/168 mm, G½ inch, max. PN 25 (2 pcs.)  8 Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3 densory and the sensor diameter of the power module for 24 V AC supply (incl. back-up battery)	Temperature sens	sor type					
and 140 mm sensor length. MIĎ approved DE-06-MIO04-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt500 setup and Pt500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt100 setup, no sensor pair included  5 Pt500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pt 500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pt 500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Pt 500 setup and Pt500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter)  No pockets (standard)  0 Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  2 Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s  (2 pcs. for 130 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 1155/168 mm, G½ inch, max. PN 25 (2 pcs.)  8 Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Alians power module for 230 V AC supply (incl. back-up battery)  3 Mains power module for 24 V AC supply (incl. back-up battery)	• •						
and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factory test report (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).  Pt100 setup, no sensor pair included Pt 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 5 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets) Pt 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter) No pockets (standard) Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.) Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (2 pcs. for 140 mm 4-wire sensors above) Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.) Stainless steel pocket, 210/225 mm length for 6 mm sensor diameter, max. PN 40 and max 5 m/s (2 pcs. for 230 mm 4-wire sensors above)  Voltage supply Battery 3.6 V DC (Litium D-cell type) (standard) Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3	and 140 mm senso test report (mentio	or length. MIÒ a	oproved DE-06-MI004-PTB011, PTB approved 22.77/09.01, incl. factor	У	3		П
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50 mm length, with MID approval (only for use with the applicable temperature sensor pockets) Pt 500 setup and PT500 sensor pair (6/50 mm), 2-wire type incl. 10 m cable, 6 mm sensor diameter and 50 mm length, with MID approval (only for use with the applicable temperature sensor pockets)  Temperature sensor pocket sets: (for 6 mm sensor diameter) No pockets (standard)  Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (2 pcs. for 140 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pocket, 210/225 mm length for 6 mm sensor diameter, max. PN 40 and max 5 m/s (2 pcs. for 230 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 155/168 mm, G½ inch, max. PN 25 (2 pcs.)  Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3	Pt100 setup, no se	ensor pair includ	led		5		
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No pockets (standard)  Brass pockets for 6 mm 2-wire sensors, length 82/92 mm, G½ inch, max. PN 16 (2 pcs.)  Stainless steel pocket, 120/135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (2 pcs. for 140 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 117/127 mm, G½ inch, max. PN 25 (2 pcs.)  Stainless steel pocket, 210/225 mm length for 6 mm sensor diameter, max. PN 40 and max 5 m/s (2 pcs. for 230 mm 4-wire sensors above)  Stainless steel pockets for 6 mm 2-wire sensors, length 155/168 mm, G½ inch, max. PN 25 (2 pcs.)  Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)				7		Ш	
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Voltage supply  Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3				7			
Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3	Stainless steel poo	ckets for 6 mm 2	-wire sensors, length 155/168 mm, G½ inch, max. PN 25 (2 pcs.)		8		
Battery 3.6 V DC (Litium D-cell type) (standard)  Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3	Voltage supply						
Mains power module for 230 V AC supply (incl. back-up battery)  Mains power module for 24 V AC supply (incl. back-up battery)  3		Litium D-cell typ	e) (standard)		1		
Mains power module for 24 V AC supply (incl. back-up battery)	,	Mains power module for 230 V AC supply (incl. back-up battery)					
					4		

## SITRANS FUE950 energy calculator

Energy calculator STRANS FUESSA, MID or PTB K7.2 custody transfer approved  Option modules  No module (actoridad)  1 module (communication module)  Mess module  18.239 module (Mess protocol)  18.239 module (Mess protocol)  18.239 module (Mess protocol)  18.239 module (Mess protocol)  19.240 module (Mess protocol)  19.254 module (Mess protocol)  19.254 module (Mess protocol)  19.254 module (Mess protocol)  19.255 module (Mess protocol)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 module (Mess) and Pulse optul. 2 kings (Int and Inc)  20.255 modul	Selection and Ordering data	Article No.	Order	code
No modulo (standard)  Manusci (communication modulo)  Manusci (Malis protocol)  Bit 328 module (Malis protocol)  Bit 328 module (Malis protocol)  Bit 328 module (Malis protocol)  Files carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Pales carpont, 2x cupps (Cost 1 Finergy) and Out2 Yolume)  Malis module signal pales carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis module signal pales carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis module signal pales carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out 1 Finergy) and Out2 Yolume)  Malis 328 module (Malis a) and Pulse carpont, 2x cupps (Out2 Finergy)  Malis 329 module (Malis Out2 Finergy)  Malis 329 module (Malis Out2 Finergy)  Mal	Energy calculator SITRANS FUE950, MID or PTB K7.2 custody transfer approved			
I module (Communication module) MR arm module MR arm module (MR Bus persono) BR 328 and module (MR Bus persono) C BR 348 module (MR Bus persono) C BR 348 module (MR Bus persono) C I module (function module) C I module (function module) C I module (function module) Pulse oniput, 2 capput (furt and In2) Pulse out-input communication and function module) G Combination of 2 modules (communication and function module) MR use module and Pulse outly (2 capput (furt and In2) MR use module and Pulse outly (2 capput (furt and In2) MR use module and Pulse outly (put of "Energy" and Out2 "Volume") MR use module and Pulse outly input (a capput (furt and In2) MR use module and Pulse outly input (a capput (furt and In2) MR use module (MR use) and Pulse outly input (a capput (furt and In2) MR use module (MR use) and Pulse outly input (a capput (furt and In2) MR use module (MR use) and Pulse outly input (a capput (furt and In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and Pulse outly input (a mind In2) MR use module (MR use) and In2 MR use module (MR use) and In2 MR use module (MR	Option modules			
MBUS module (M-Bus protocol)  8 485 module (M-Bus protocol)  18 485 module (M-Bus protocol)  18 485 module (M-Bus protocol)  19 1 module (fund module)  19 1 module (communication and function module)  19 1 module (and police could)  19 2 module (and police could)  19 2 module (and police could)  19 2 module (and police could)  19 3 module (and police could)  19 4 module (and police could)  19 4 module (and police could)  19 4 module (and police could)  19 5 module (and police could)  19 6 module (and police could)  20 module (and police could)	No module (standard)	A		
18.3 22 module (M-Bus protocol) 1 module (function module) 1 piles culput, 2x input (fin1 and In2) 1 piles 22m module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 22m module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 23m module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 32m module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 348 module (M-Bus) and Pulse culput, 2x input (fin1 and In2) 1 piles 448 module (Print 1 and In2) 1 piles by and and Pulse culput, 2x input (fin1 and In2) 1 piles by and and Pulse culput (fin1 and In2) 1 piles by and and and Pulse culput (fin1 and In2) 1 piles by and and and Pulse culput (fin1 and In2) 1 piles by and	1 module (communication module)			
Bit Als Emodule (McRus protococ) In module (function module) Palse on upta 2: output (Oat 1 Finergy" and Out2 'Volume') Palse on upta 2: output (Oat 1 Finergy" and Out2 'Volume') Palse output 2: output (Oat 1 Finergy" and Out2 'Volume') Palse output 3: output (Oat 1 Finergy" and Out2 'Volume') Makes module and Pulse output 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module and Pulse output 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module and Pulse output 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module and Pulse output 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy" and Out2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy and Oat2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy and Oat2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat 1 Finergy and Oat2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat2 Finergy and Oat2 'Volume') Makes Makes module (McRus) and Pulse output, 2: output (Oat2 Finergy and Oat2 'Volume') Makes Makes module (McRus) and Pulse output (Oat2 Finergy and Oat2 'Volume') Makes M	M-Bus module			
Important Function Products				
Pulse optupt, 2x output (Out 1"Energy" and Out2" Volume") Pulse optut, 2x input (fin and Inc) Pulse optut, 2x input (fin and Inc) Pulse optut, 2x input (fin and Inc) Pulse optut, 2x input and 1x output Combination of 2 modules (communication and function module) Misus module and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") Misus module and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") Misus module and Pulse output, 2x input (fin and Inc) Misus module and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") Kit S22 module (Mi-Bus) and Pulse output, 2x input (in and Inc) Misus module and Pulse output, 2x input (in and Inc) Misus 22x module (Mi-Bus) and Pulse output, 2x input (in and Inc) Misus 23x module (Mi-Bus) and Pulse output, 2x input (in and Inc) Misus 48x module (Mi-Bus) and Pulse output, 2x input (fin and Inc) Misus 48x module (Mi-Bus) and Pulse output, 2x input (fin and Inc) Misus 48x module (Mi-Bus) and Pulse output, 2x input (fin and Inc) Misus 48x module (Mi-Bus) and Pulse outly Input cembration, 2x input and 1x output Combination current output module, 2x passive 4 20 mA (Out 1"Power", Out 2 "Flow") Display units and resolutions Mivin & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Display units and resolutions Mivin & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Gol & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Gol & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Gol & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Gol & kiw, m <sup>2</sup> , m <sup>2</sup> h in 1 digit resolution; Temperature: no decimal figures  Misul & Misul Mi				
Combination of 2 modules (communication and function module)  M-Bus module and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  M-Bus module and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  M-Bus module and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus module and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus module of M-Bus and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus and Pulse output, 22 output (In and In?)  K M-Bus 32 module (M-Bus) and Pulse output, 22 output (In and In?)  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Out 1 Theorgy" and Out2 "Volume")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output, 22 output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output (Output 1 Theory")  K M-Bus 48-Module (M-Bus) and Pulse output (M-Bus)	Pulse output, 2x output (Out1 "Energy" and Out2 "Volume")	E		
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M-Bus module (M-Bus) and Pulse out/-nput combination, 2x input and 1x output RS 232 module (M-Bus) and Pulse output, 2x input (Int and In2) MS 232 module (M-Bus) and Pulse output, 2x input (Int and In2) MS 232 module (M-Bus) and Pulse input, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output, 2x input (Int and In2) MS 485 As module (M-Bus) and Pulse output module, 2x passive 4 20 mA (Out 1 'Power', Out 2 'Flow') Concupies both module Ports 1 and 2)  Display units and resolutions MWh & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures MWh & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GU & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GU & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GU & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GO & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GO & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GO & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GO & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures GO & kW, m², m²³n in 12 digit resolution; Temperature: no decimal figures MB U & MBTUN, m², m²³n in 12 digit resolution; Temperature: no decimal figures WHO & MBTUN, m², m²³n in 12 digit resolution; Temperature: no decimal figures WHO & MBTUN, m², m²³n in 12 digit resolution; Temperature: no decimal figures WHO & MBTUN, m², m²n in 11 digit resolution; Temperature: no decimal figures WHO & MBTUN, m², m²n in 11 digit resolution; Temperature: no decimal figures WHO & MBTUN, m², m²n in 11 digit resolution; Temperature: no decimal figures WHO & M	, , , , , , , , , , , , , , , , , , , ,			
RS 232 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") RS 232 module (M-Bus) and Pulse input, 2x input (In1 and In2) RS 485 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") RS 485 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (Out1 "Energy" and Out2 "Volume") RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (M-Bus) and Pulse output (In1 and In2) RS 485 module (In1 and In1 and In				
HS 232 module (M-Bus) and Pulse input. 2x input (in1 and In2) RS 242 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") RS 485 module (M-Bus) and Pulse output, 2x input (in1 and In2) RS 485 module (M-Bus) and Pulse input, 2x input (in1 and In2) RS 485 module (M-Bus) and Pulse output, 2x input (in1 and In2) RS 485 module (M-Bus) and Pulse output, 2x input (in1 and In2) RS 485 module (M-Bus) and Pulse output, 2x input (in1 and In2) RS 485 module (M-Bus) and Pulse output indoutie, 2x passive 4 20 mA (Out 1 "Power", Out 2 "Flow") (occupies both module Ports 1 and 2)  Display units and resolutions  Whin a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures MWh a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 1 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW, m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW m², m²/h in 2 digit resolution; Temperature: no decimal figures GU a kW m², m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTUh, m², m²/h in 1 digit resolution; Temperature: no decimal figures GU a kW m², m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTUh, m², m²/h in 1 digit resolution; Temperature: no decimal figures GU a kW m²/m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTUh, m², m²/h in not digit resolution; Temperature: no decimal figures GU a kW m²/m²/h in 1 digit resolution; Temperature: no decimal figures GU a kW m²/m²/h in digit m²/m²/h in 1 digit resolution; Temperature: no decimal figures				
RS 485 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume") RS 485 module (M-Bus) and Pulse input, 2x input (in1 and in2) RS 485 module (M-Bus) and Pulse out/input combination, 2x input and 1x output Combination current output module, 2x passive 4 20 mA (Out 1 "Power", Out 2 "Flow") (occupies both module Ports 1 and 2)  Display units and resolutions  MVh & KW, m <sup>2</sup> , m <sup>2</sup> /h in 2 digit resolution; Temperature: no decimal figures  MVh & KW, m <sup>2</sup> , m <sup>2</sup> /h in 1 digit resolution; Temperature: no decimal figures  MVh & KW, m <sup>2</sup> , m <sup>2</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  Verification/Approval  Without bye approval mark, neutral label (standard))  Without bye approval mark, neutral label (standard))  Without bye approval mark, neutral label (standard)  Without bye approval mark, forman national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  1 Voloning approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Purcher designs  Cooling, setup for non water  Water(glocal setting for me	RS 232 module (M-Bus) and Pulse input, 2x input (In1 and In2)	M		
BS 485 module (M-Bus) and Pulse input, 2x input (in1 and in2) BS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output BS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output BS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output BS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output BS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output BS 485 module Ports 1 and 2) Bipsigy units and resolutions  MWh & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MWh & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BJ 48 KW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures BJ 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BJ 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BJ 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures BG 48 KW, m³, m³/h in 2 digit resolution; Tempera	RS 232 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output			
RS 485 module (M-Bus) and Pulse out/-input combination, 2x input and 1x output  Combination current output module, 2x passive 4 20 mA (Out 1 "Power", Out 2 "Flow") (occupies both module Ports 1 and 2)  Display units and resolutions  MWh & KW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures  MWh & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GJ & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  GL & KW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTUh, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTUh, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTUh, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTUh, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTUh, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  Without type approval mark, neutral label (standard))  With MID type approval mark, neutral label (standard))  With MID type approval mark, forth for heating combinations, selection n³. A, B, E and F')  1 With MID approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection n°. Cand D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection n°. Cand D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selec	RS 485 module (M-Bus) and Pulse output, 2x output (Out1 "Energy" and Out2 "Volume")			
Combination current output module, 2x passive 4 20 mA (Out 1 'Power', Out 2 'Flow')    Coccupies both module Ports 1 and 2)				
Display units and resolutions  MWh & kW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures  C MWh & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  B & G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 0 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  G & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  M in the second of the sec				
MWh & kW, m <sup>3</sup> , m <sup>3</sup> /h in 2 digit resolution; Temperature: no decimal figures  MWh & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 2 digit resolution; Temperature: no decimal figures  GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 2 digit resolution; Temperature: no decimal figures  GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  GCal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures  Without type approval mark, (neman figures)  Selection (1) a digit resolution; Temperature: no decimal figures  Without type approval mark (neman national cooling approval new (1) a digit resolution; Temperature: no decimal figures  Selection (2) a digit resolution; Temperature: no decimal figures  Without type approval mark (neman national cooling approval new (1) a digit resolution; Temperature: no decimal figures  Selection (2) a digit resolution; Temperature: no decimal figures  Selection (3) a digit resolution; Temperature: no decimal figures  R  BETO (4) a digit resolution; Temperature: no decimal figures  BETO (5) a digit resolution; Temperature: no decimal figures  BETO (6) a digit resolution; Temperature: no decimal figures  BETO (6) a digit resolution; Temperature: no decimal figures  BETO (7) a digit resolution; Temperature: no	(occupies both module Ports 1 and 2)			
MWh & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m³, m³h in 2 digit resolution; Temperature: no decimal figures  GJ & kW, m³, m³h in 2 digit resolution; Temperature: no decimal figures  GJ & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GJ & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GGal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GGal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GGal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  GGal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures  Without type approval mark, neutral label (standard))  With MID type approval mark, neutral label (standard))  With MID type approval mark, neutral label (standard))  With MID type approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection 'C and D')  2 Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection 'C and D')  **Turther designs**  **Pushe designs**  **Pushe average mark**  **P	Display units and resolutions			
MWh & kW, m³, m³/h in 0 digit resolution; Temperature: no decimal figures GJ & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures GJ & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures GJ & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures KGacl & kW, m³, m³/h in 10 digit resolution; Temperature: no decimal figures Gal & kW, m³, m³/h in 10 digit resolution; Temperature: no decimal figures Gal & kW, m³, m³/h in 10 digit resolution; Temperature: no decimal figures Gal & kW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures Gal & kW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  Without type approval mark, neutral label (standard))  Without type approval mark, (neutral label (standard))  With MID type approval mark, (neutral label (standard))  With MID type approval mark, (German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection 'C and D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification  Redia water, selection 'C and D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification  Redia water, selection 'C and D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification  Redia water, selection 'C and D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification  Redia water, selection 'C and D')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification  Redia water, selection 'C and D')  Cooling approval mark, German national cooling approval according	MWh & kW, m <sup>3</sup> , m <sup>3</sup> /h in 2 digit resolution; Temperature: no decimal figures			
GJ & kW, m³, m²/h in 1 digit resolution; Temperature: no decimal figures GJ & kW, m³, m³/h in 2 digit resolution; Temperature: no decimal figures GCal & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures GCal & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures GCal & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures GCal & kW, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 0 digit resolution; Temperature: no decimal figures Wthout type approval mark, neutral label (standard)) With MID type approval mark, neutral label (standard)) With MID type approval mark (only for heating combinations, selection "A, B, E and F") 1 With MID approval mark and first MID verification (only for heating, selection "A, B, E and F") 2 Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  7 media water, selection "C and D")  8 verther designs Please add "-2" to Article No. and specify Order code  Certificate Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Cooling, setup for non water Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Cooling settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  To the max and	MWh & kW, m <sup>3</sup> , m <sup>3</sup> /h in 0 digit resolution; Temperature: no decimal figures			
Gola & kW, m³, m³/h in 0 digit resolution; Temperature: no decimal figures Gola & kW, m³, m²/h in 12 digit resolution; Temperature: no decimal figures Gola & kW, m³, m²/h in 0 digit resolution; Temperature: no decimal figures Gola & kW, m³, m²/h in 0 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m²/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures Without type approval mark, neutral label (standard)) With MID approval mark, neutral label (standard)) With MID approval mark, neutral label (standard)) With MID approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D") Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  **Further designs** Please add "-Z" to Article No. and specify Order code  **Certificate* Including factory test report (certificate) of FUE950  **Cooling, setup for non water*  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  **Cooling, setup for non water*  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  **Cooling, setup for non water*  Water/glycol setting of option module (specify in clear text, up to max. 20 characters)  **Pulse only testing of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to m				
Gcal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures Gcal & kW, m³, m³h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³h in 2 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures WIMT & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures WIMT & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures WIMT & MBTU/h, m³, m³h in 1 digit resolution; Temperature: no decimal figures  Verification/Approval Without type approval mark, neutral label (standard)) With MID type approval mark, neutral label (standard)) With MID type approval mark, neutral label (standard)) With MID approval mark and first MID verification (only for heating, selection A, B, E and F') 1 With MID approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D") Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  **Further designs** Please add "-Z" to Article No. and specify Order code  **Certificate** Including factory test report (certificate) of FUE950  **Cooling, setup for non water*  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  **Optional settings (specify in clear text, up to max. 20 characters)  **Duse output setting of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to max. 20 characters)  **Duse output setting of option module (specify in clear text, up to max. 20 characters)  **Pulse input setting of option module (specify in clear text, up to max. 20 characters)  **Duse output setting of option module (specify in clea	GJ & kW, m <sup>3</sup> , m <sup>3</sup> /h in 0 digit resolution; Temperature: no decimal figures		K	
Gcal & kW, m³, m³/h - in 0 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³/h in 2 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures  MBTU & MBTU/h, m³, m³/h - in 0 digit resolution; Temperature: no decimal figures  Verification/Approval  Without type approval mark, neutral label (standard))  With MID type approval mark (notify for heating combinations, selection *A, B, E and F')  With MID approval mark and first MID verification (only for heating, selection A, B, E and F')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add '-Z' to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  ALWAYS INCLUDED  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Coptional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to m	Gcal & kW, m <sup>3</sup> , m <sup>3</sup> /h in 2 digit resolution; Temperature: no decimal figures		М	
MBTU & MBTU/h, m³, m³/h in 1 digit resolution; Temperature: no decimal figures MBTU & MBTU/h, m³, m³/h - in 0 digit resolution; Temperature: no decimal figures  Verification/Approval Without type approval mark, neutral label (standard)) With MID type approval mark (only for heating combinations, selection "A, B, E and F") With MID approval mark and first MID verfication (only for heating, selection A, B, E and F")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters) Pulse output setting of option module (specify in clear text, up to max. 20 characters) Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to ma	Gcal & kW, m <sup>3</sup> , m <sup>3</sup> /h - in 0 digit resolution; Temperature: no decimal figures			
Without type approval mark, neutral label (standard))  With MID type approval mark (only for heating combinations, selection "A, B, E and F")  With MID approval mark and first MID vertication (only for heating, selection A, B, E and F")  2 Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Coptional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 characters)  Do applies input setting of option module (specify in clear text, up to max. 20 chara	MBTU & MBTU/h, m <sup>3</sup> , m <sup>3</sup> /h in 1 digit resolution; Temperature: no decimal figures		R	
With MID type approval mark (only for heating combinations, selection "A, B, E and F")  With MID approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Verification/Approval	-		
With MID approval mark and first MID vertication (only for heating, selection A, B, E and F')  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol settings for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Without type approval mark, neutral label (standard))		0	
media water, selection "C and D")  Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	With MID type approval mark (only for heating combinations, selection "A, B, E and F") With MID approval mark and first MID verfication (only for heating, selection A, B, E and F")			
(only for cooling and media water, selection "C and D")  Further designs  Please add "-Z" to Article No. and specify Order code  Certificate  Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Cooling approval mark, German national cooling approval according PTB-TR-K7.2 (only for cooling and media water, selection "C and D")		7	
Please add "-Z" to Article No. and specify Order code  Certificate Including factory test report (certificate) of FUE950  Cooling, setup for non water Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters) Pulse output setting of option module (specify in clear text, up to max. 20 characters) Pulse input setting of option module (specify in clear text, up to max. 20 characters) Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Cooling approval mark, German national cooling approval according PTB-TR-K7.2 and first verification (only for cooling and media water, selection "C and D")		8	
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Including factory test report (certificate) of FUE950  Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Co 2  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Please add "-Z" to Article No. and specify Order code			
Cooling, setup for non water  Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  C 0 2  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Certificate			
Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)  Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Including factory test report (certificate) of FUE950	ALWAYS INCLUDED		
Optional settings/programming  Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)  L 0 5	Cooling, setup for non water			
Tariff function settings (specify in clear text, up to max. 20 characters)  Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  D 1 0 setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Water/glycol setting for media type "Tyfocor LS (R)" (only with neutral label, no verification and approval)			C 0 2
Pulse output setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  D 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	Optional settings/programming			
Pulse input setting of option module (specify in clear text, up to max. 20 characters)  Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Tariff function settings (specify in clear text, up to max. 20 characters)			D 0 2
Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)  Special display units  Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)				
Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)	Pulse input setting of 4 20 mA option module (please specify 20 mA related type and value in clear text, up to max. 20 characters)			D 1 0
	Special display units			
Temperature in deg. F (digit resolution as selected above)	Flow in 'GPM' and Volume in 'gal' (x100) (digits/resolution as selected above, only with 0 digit resolution)			L 0 5
	Temperature in deg. F (digit resolution as selected above)			L 3 1

SITRANS F US Inline

## SITRANS FUE950 energy calculator

# Flowmeter SITRANS FUE950 operating instructions, accessories and spare parts

## Operating instructions

Description	Article No.
• English	A5E03424739

This device is shipped with a Quick Start guide and a CD containing further SITRANS F US literature.

All literature is available to download for free, in a range of languages, at www.siemens.com/processinstrumentation/documentation

#### Accessories

Description	Article No.
Infrared optical head (Bluetooth type) for data acquisition & programming of FUE950	A5E02611768
Bracket for SITRANS FUE950 wall mounting (20 pcs.)	A5E02611769
Cable for data acquisition via RS 232 PC/D-sub 9F/3 wire	A5E02611774
Basic version of programming software tool for FUE950	free download from internet
Expert version of programming software tool for FUE950	A5E03478951
Test Lab. version of re-programming software tool for FUE950 (Note: Before using this Test-Lab version an online training must be completed)	A5E03461778

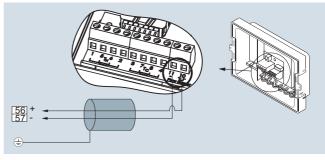
## Spare parts

opaic parts	
Description	Article No.
Add-on modules for FUE950 (only for 7ME348 versions)	
Pulse input module (2 inputs)	A5E03461432
Pulse output module (2 outputs)	A5E03461436
Combined pulse in-/output module (2 inputs and 1 output)	A5E03461437
RS 232 module (M-Bus protocol)	A5E03461459
RS 485 module (M-Bus protocol)	A5E03461512
M-Bus module	A5E03461516
Combined current output module, 2 x passive 4 20 mA	A5E03461583
Connection cable for option modules (types: Pulse, RS 232/RS 485, M-Bus, mA) (special connection cable with 2 plugs)	A5E03461585
Power supply for FUE950 (only for 7ME348 versions)	
3.6 V D-cell battery for SITRANS FUE950	A5E03461708
230 V AC supply module (incl. internal fuse T50 mA L 250 V and back-up battery) for SITRANS FUE950 $$	A5E03461717
24 V AC supply module for SITRANS FUE950, incl. back-up battery	A5E03461719
Pocket for temperature sensors Pt500 (for related 4-wire Pt500 type only, 1 pc.)	
Stainless steel pocket (1 pc.), 135 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (recommended for 140 mm sensor length).	A5E03462868
Stainless steel pocket (1 pc.), 225 mm length for 6 mm sensor diameter, max. PN 40 and max. 5 m/s (recommended for 230 mm sensor length).	A5E03462870

Description	Article No.
Pt500 4-wire temperature sensor pair, with MID MI004 and PTB K7.2 approvals and verification (for related 4-wire sensor pocket types only)	
Pt500 sensor pair (6/140 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 140 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01 (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).	A5E03462872
PT500 sensor pair (6/230 mm), 4-wire with 5 m connection cable, 6 mm sensor diameter and 230 mm sensor length. MID approved DE-06-MI004-PTB011, PTB approved 22.77/09.01 (mentioned approvals are only valid if temp. sensors are used with the applicable temperature sensor pockets).	A5E03462878
FUE950 enclosure (only for 7ME348 versions)	
Bottom part of FUE950 enclosure (1 pc.)	A5E03461508
Snap fit for FUE950 enclosure (1 pc.)	A5E30461731
Pocket for Pt500 temperature sensors (for corresponding 2-wire Pt500 types only, 1pc.)	
Brass pocket 6 mm, G½B x 40 mm (PN 16), 1 pc.	A5E02611778
Brass pocket 6 mm, $G\frac{1}{2}B \times 85$ mm (PN 16), 1 pc.	A5E02611779
Brass pocket 6 mm, $G\frac{1}{2}B \times 120$ mm (PN 16), 1 pc.	A5E02611780
Stainless steel 6 mm, $G\frac{1}{2}B \times 85$ mm (PN 25), 1 pc.	A5E02611781
Stainless steel 6 mm, $G\frac{1}{2}B \times 120$ mm (PN 25), 1 pc.	A5E02611783
Stainless steel 6 mm, $G\frac{1}{2}B \times 155$ mm (PN 25), 1 pc.	A5E02611792
Stainless steel 6 mm, G½B x 210 mm (PN 25), 1 pc.	A5E02611793
Pt500 temperature sensor pair, 2-wire cable, 6 mm sensor diameter, with MID/EN-approval (for corressponding 2-wire sensor pocket types only)	
Cable length:	
2 m	A5E02611794
3 m	A5E02611795
5 m	A5E02611796
10 m	A5E02611798

## Schematics

# Electrical connection for SITRANS FUS380/FUE380/FUE950 and MAG 5000/6000/FUE950



The diagram shows the connection between SITRANS FUE950 (terminals 10 and 11) and FUS380/FUE380 and MAG 5000/6000 (terminals 56 and 57). Temperature sensors must be connected to terminals 5 (1) and 6 (2) ( $T_{\rm H}$ ) and 7 (3) and 8 (4) ( $T_{\rm C}$ ).

## Note:

The right flowmeter pulse output value must be equal to the FUE950 pulse input value and must be checked via the user menu of the transmitter MAG 5000/6000 or nameplate of FUE380 or FUS380.