SIEMENS

Meters and Energy Cost Allocation

Impeller heat and heat/cooling energy meters

WFx5



Electronic, mains-independent impeller type heat meters with optional cooling range to acquire heat or cooling energy consumption on autonomous heating, cooling or solar plants.

- Nominal flow 0.6 m^3/h, 1.5 m^3/h or 2.5 m^3/h
- Optional communications add-on module
  - M-Bus wired
  - M-bus wireless: Communication in S-mode or C-mode or data transmission per the OMS security profile with AES-128 encryption to Security mode 5 (Standard) or Security mode 7 (upon request)
- No upstream or downstream setting paths required
- Can be installed horizontally or vertically
- Setting of device-specific parameters on the meter itself in the field via buttons or operating and parameter setting software ACT50
- Optical interface
- Self diagnostics

CE

Application

The impeller type heat and cooling energy meter is of compact design and used for the physically accurate acquisition of energy consumption.

The meters consists of:

- Flow sensor
- 2 preconnected temperature sensors
- An electronics unit that calculates energy consumption from flow and temperature differential.

The meter is available for:

- Heat counter
- Combined heating/cooling energy meter
- Solar metering

It is primarily used on plants with central production of heat or cooling energy, where the heating or cooling energy is individually supplied in lines to multiple consumers, for example in:

- Multi-family homes
- Office and administrative buildings

Typical users:

- Service and billing providers
- Housing industry and housing cooperatives
- Building service companies and real estate agencies

Limitations

The meter's temperature sensors and battery cannot be replaced.

The meter is not approved for use in drinking water systems.

RF sets

Available RF heating and RF heating/cooling meter sets are available in at 'Product documentation [▶ 21]', data sheet A6V11259309.

Functions

Meter design

The meter comprises a flow and return temperature sensor and flow sensor installed in a hot water or cooling water circuit.

A processor continuously calculates the temperature differential of flow and return and multiplies the value by the flow rate. The result (the current heat or cooling energy output) is added up, displayed, and forwarded via radio or cable to a data processing system using an optional add-on module. A long-life battery powers the processor for up to 10 years.

Impeller type measuring principle

The meter's flow sensor operates in accordance wit the single-jet impeller sensor principle. The water flow hits the impeller radially. The impeller's speed is scanned electronically.

Incorrect direction of flow is detected and indicated by an error message on the display.

Calculation of heat or cooling energy consumption

Using the acquired temperature differential of flow and return, the measured flow rate as well as the calculated thermal coefficient, the quantity of heat or cooling energy is shown on the display in physical units (kWh or MWh/MJ or GJ) following an internal calculation process. To increase measuring accuracy, the density and enthalpy values are determined for every measurement and included in the calculation.

Processor unit

The same standard electronic unit with a built-in service unit is used for all flow rates.

Infrared interface

Consumption meters with optical close-range interface must be read out on site. The WFZ.IRDA-USB optical reading head and associated ACT50 readout and parameterization software reads out and configures the meter.

Module interface

Each meter is equipped with a module interface. The meter can be read out from a remote location by installing the optional add-on module.

Tampering

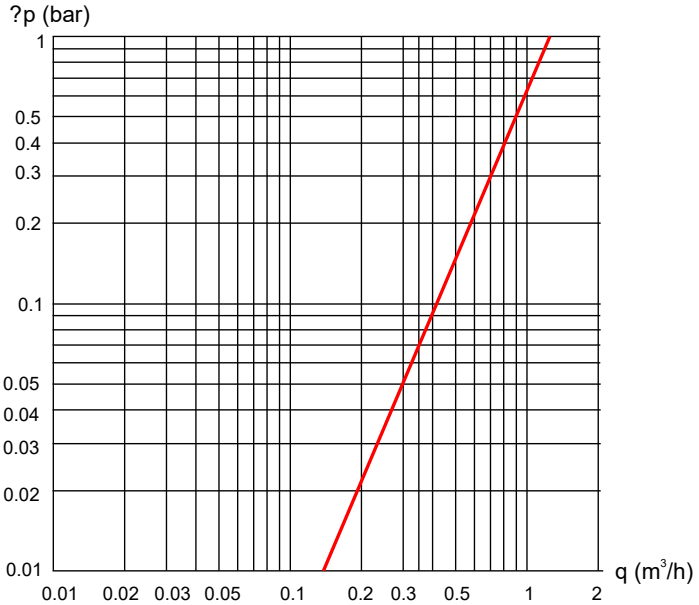
The meter is protected by a factory-fitted seal.

Measuring functions

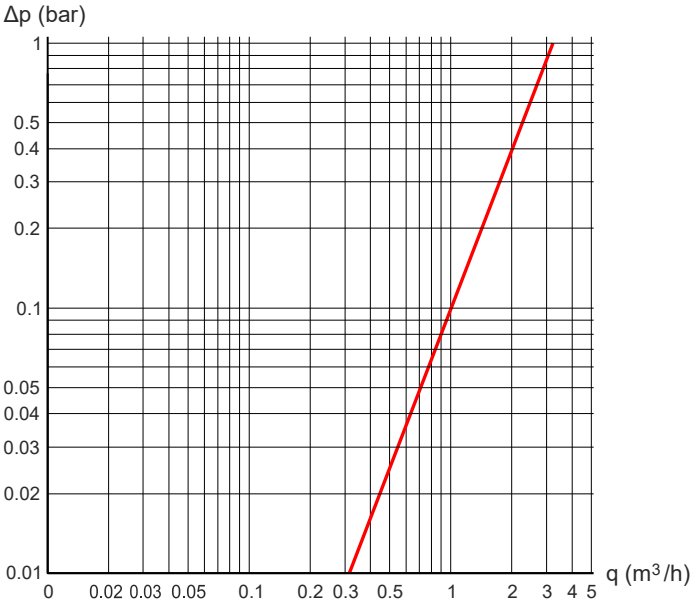
The temperature is acquired at 36-second intervals (or optional, every 6 seconds at a shortened battery life of 6 years). The flow is acquired continuously. The amount of energy supplied is displayed in real time. Any errors are immediately displayed.

Technical design

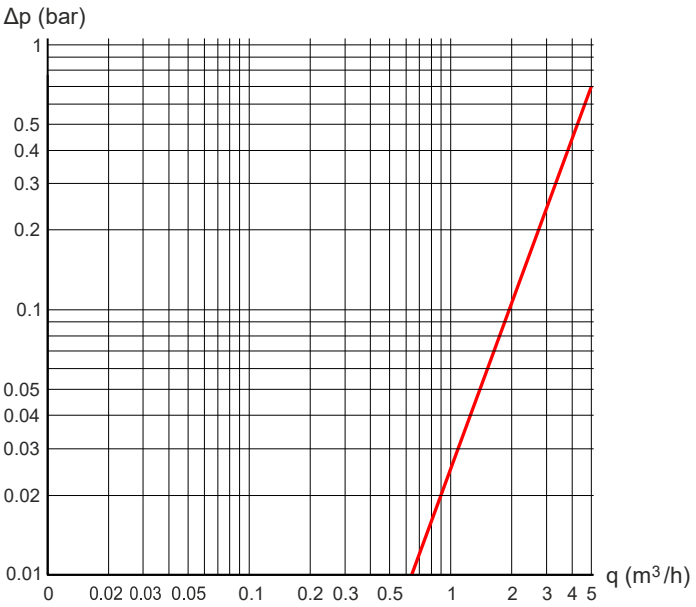
Screw-on pressure loss characteristic 0.6 m³/h, 110 mm



Screw-on pressure loss characteristic 1.5 m³/h, 80 mm and 110 mm



Screw-on pressure loss characteristic 2.5 m³/h, 130 mm



Standard parameters

The unit comes programmed as follows:

- Due date: 31.12.
- Display of consumption in kWh

All display levels are shown.

The heating or cooling energy consumption values are continuously cumulated. The state is stored at 12 am on the due date.

Every time current and annual consumption is stored, the heat meter calculates a checksum. This can be read out together with the due date value and checked in the billing program.

This detects incorrect read outs of the display. The stored due date remains in place for one year.

Parameter settings via PC

The following parameters are read out or set with the ACT50 software via the optical close-range interface:

General

- Serial number
- Mounting place
- Mounting location
- Firmware version
- Medium
- Commissioning date
- Battery life
- Stock number
- Heat carrier
- Error date
- Error code

Device information

- Current temperature (return)
- Current temperature (flow)
- Current temperature difference
- Current energy flow
- Current flow rate
- Total flow rate
- Pulse value
- Device name

Meter states

- Current meter state
- Last due date
- Meter state on last due date
- Next due date
- Supply low:
  - Maximum temperature
  - Date of maximum temperature
  - Duration of upper deviations
- Return flow:
  - Maximum temperature
  - Date of maximum temperature
  - Duration of upper deviations
- Flow:
  - Maximum flow rate
  - Date of maximum flow rate
  - Duration of upper deviations
- Statistical values:
  - 15 monthly values with date

In addition for devices with solar modification:

- Ratio of glycol or brine

Parameter settings via the meter

The following parameters can be entered directly on the meter using both operating buttons:

- Next due date
- Display of kWh or MWh/MJ or GJ
- Selection of levels to be displayed
- Display of meter read outs with or without checksum

In addition for devices with solar modification:

- Ratio of glycol on solar plants

Communication

The meter is supplied with an optical close-range interface.

Add-on modules



The following external communication modules are available:

- M-bus module WFZ51
- RF add-on modules WFZ662/WFZ662C
- RF add-on module WFZ662CE with AES-128 encryption (Security mode 5)

The ACT50 software can be used to configure the RF add-on module.

M-bus module WFZ51



Function description

The M-bus module (WFZ51) enables the meter to communicate with an M-bus central communication unit to transmit the measured values. The module can be read out 24/7 as often as you want via M-bus. The heat meter measured values are read out and saved from the module at 10-minute intervals.

Readout parameters

The following parameters are read out via the M-bus interface:

- Device number (8 digits)
- Medium/software version
- Time of day/date
- Error state (readout 5 or 45 times a day)
- Error date
- Current consumption values (heat or cooling energy, volume)
- Due date
- Due date value (heating or cooling energy)

The following data queried via application selection (per EN 13757-3 or supplier-specific) as an option:

- 13 monthly values (heating or cooling energy)
- Flow rate
- Power
- Energy
- Flow/return temperature

RF add-on modules WFZ662 / WFZ662C / WFZ662CE



The meters are read out remotely using the RF add-on module. The module sends out parallel AMR and walk-by data telegrams.

- WFZ662: S-mode data
- WFZ662C: C-mode data
- WFZ662CE: C-mode with AES-128 encryption (Security mode 5)

AMR telegrams are automatically collected and saved by a network node WTT662... Walk-by telegrams can be collected with the mobile parameterization and readout tool WTT726-FE7300 data logger WTT665. The customer can remotely read out all plant consumption data.

Readout parameters

The following parameters can be read out and/or configured using the ACT50 read out and parameterization software via the IrDA interface:

Read out only:

General

- Serial number
- Mounting place
- SW version
- Commissioning date
- Battery life
- Stock number
- Device date
- Error date
- Error code

Device information

- Device name/password

Meter states

- Current meter state
- Last due date
- Meter state on last due date
- Next due date

Statistical values

- 13 monthly values

RF settings

- RF mode
- RF system
- Walk-by readout type
- Walk-by transmission delay
- Walk-by transmission timeframe
- Walk-by transmission-free days

Configuration:

General

- Mounting place

Due date

- Next due date

Device information

- Device name
- Device password

RF settings

- RF mode
- RF system
- Walk-by readout type (S-mode only)
- Walk-by transmission delay (S-mode only)
- Walk-by transmission timeframe
- Walk-by transmission-free days (S-mode only)

RF features in S-mode

RF add-on module in S-mode have the following features:		
RF system	Parallel transmission of data telegrams	• AMR • Walk-by
Transmission delay (Offset)	Time delay for sending out telegrams after the due date Time delay for sending out telegrams after the start of the month in days (Default = 0 days)	
Transmission-free days	A maximum of 2 days of the week can be defined as transmission-free days. At least 1 day of the week must be set (Default = Sunday)	
Transmission response		
AMR telegrams	Every 4 hours, 24 hours a day, 365 days a year Data telegrams with the current consumption value and due date value as well as monthly telegrams with consumption value at the end of the last month	
Walk-by telegrams	Every 128 seconds, 10 hours a day (from 8:00 am to 6:00 pm)	
	Readout type	Monthly: 4 readout days as of the first of each month Annually: 48 readout days, once a year by due date
	Transmission-free days	Monthly: Saturday and Sunday Annually: Sunday
	Current consumption value, due date value, due date as well as end of month values for the last 13 months	

RF features in C-mode

Wireless attributes for the RF add-on modules with or without AES-128-encrypted data transmission per Security mode 5 (Standard) or mode 7 (optional)

RF add-on modules in C-mode have the following features:		
RF system	Parallel transmission of data telegrams	• AMR (OMS-compliant data transmissions) • Walk-by
	Increased radio power (10 dBm)	
Transmission response		
AMR telegrams	Every 7.5 minutes, 24 hours a day, 365 days a year • Current consumption with date • Last monthly value with date • Due date value with date • Device status: Error code and error date	
Walk-by telegrams (Devices with Security mode 5 only)	Every 112 seconds, 10 hours a day (from 8:00 am to 6:00 pm) 365 days a year • Current consumption with date • Last monthly value with date and 12 additional monthly values • Due date value with date • Device status: Error code and error date	

Change of mode

The following tool combinations can toggle between S-mode and C-mode:

- ACT50 readout and parameterization software and
- Infrared read head WFZ.IRDA-USB [1]

Or:

- ACT50 readout and parameterization software and
- Mobile parameterization and readout tool for WTT726-FE7300

[1] No longer available

The customer cannot switch between Security mode 5 and Security mode 7 as well as enable or disable encryption in the field.

Encrypted communication

Wireless devices can be ordered that communicate via the OMS security profile using AES-128 encryption (Security mode 5).

The Key Handling Portal is the central platform for managing required AES keys. You must register on the Key Handling Portal at https://keyhandling.siemens.com/ to access the corresponding AES key.

For background information, see document A6V15062322.

Read out encrypted devices from the IoT gateway WTV776 or S GCP

The IoT gateway WTV776 or S GCP retrieves the AES keys deposited in the Key Handling Portal. This securely decrypts data transmitted in the IoT gateway or S GCP.

Read out encrypted devices via walk-by

App 'ACT60 Metering' reads out data via walk-by. Wireless devices (DMC) must be scanned using App 'Key Management Assist' and assigned to the corresponding customer account to use the app. Walk-by read out connects 'ACT60 Metering' to the Key Handling Portal and queries the required AES key. This decrypts and reads telegrams directly on site.

Apps 'ACT60 Metering' (Android only) and 'Key Management Assist' can be downloaded from the appropriate app store.

For additional information, see Product documentation [▶ 21].

Display:

Processor type

The LCD displays meter states, display units, and consumption values on multiple levels.

The meter has 2 buttons to switch between the individual display steps and levels.



1 Button for navigating on a level

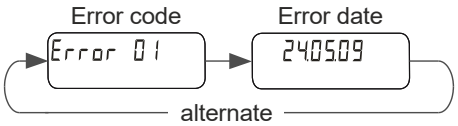
2 Button for changing a level

Operation

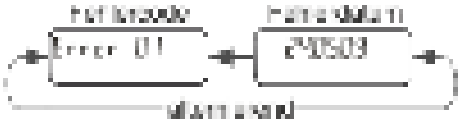
For detailed information on operation and fast readout, refer to 'Product documentation [▸ 21]', data sheet A6V10816676.

Error messages

For a serious fault, the error code and error data is displayed in front of the meter state display.



The meter state display displays "incorrect flow direction" if it determines that the flow direction is wrong:



Detailed information on error messages and displays is available under 'Product documentation [▸ 21]', operating instructions A6V10816676.

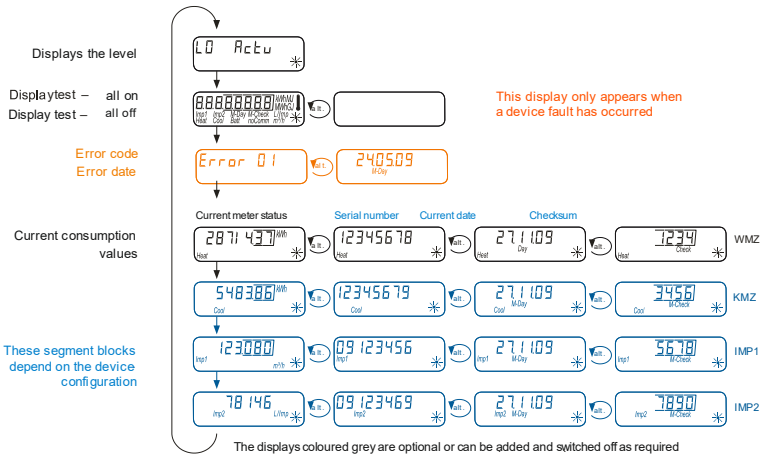
Display levels

The following display levels are available:

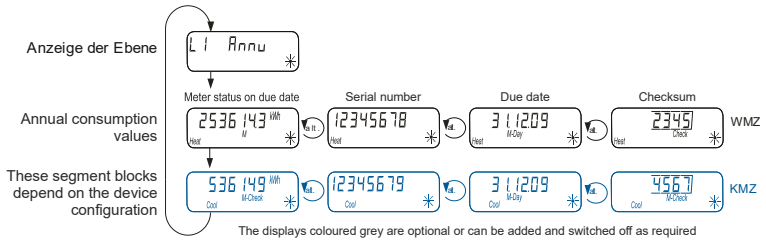
- Standard levels:
  - L0 Current consumption values
  - L1 Annual consumption values
- The levels can be deactivated individually:
  - L2 Current values
  - L3 Parameters
  - L4 Connections
  - L5 Monthly values heat
  - L6 Monthly values cooling
  - L9 Maximum values

If an error message is pending, it is logged with the respective error code and the date the error occurred and shown on the display (alternating).

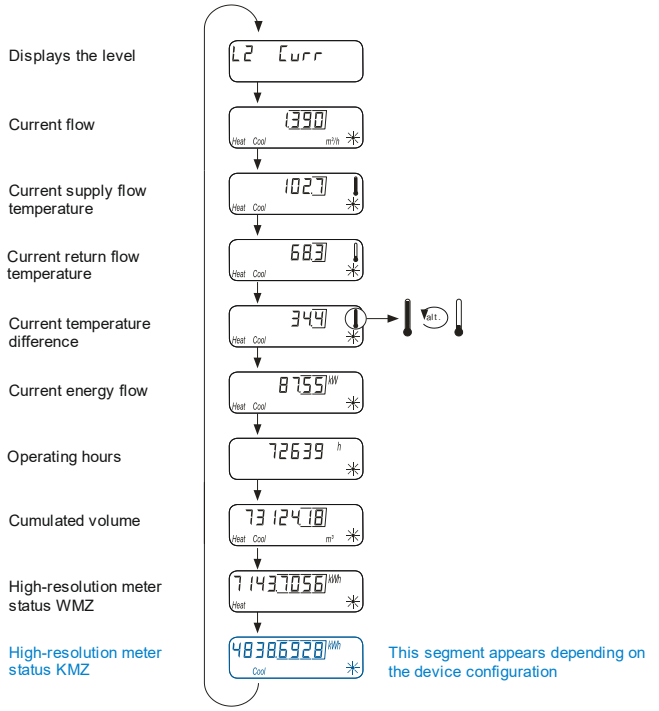
Level L0
Current consumption values



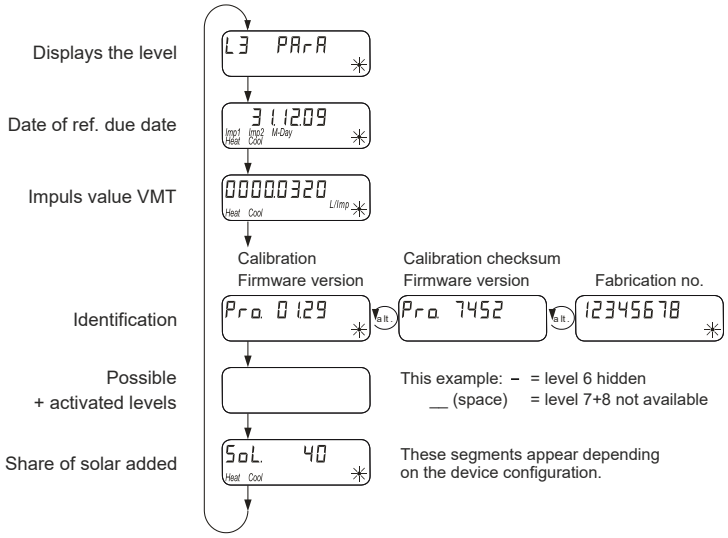
Level L1
Consumption values at the Due date



Level L2
Current values

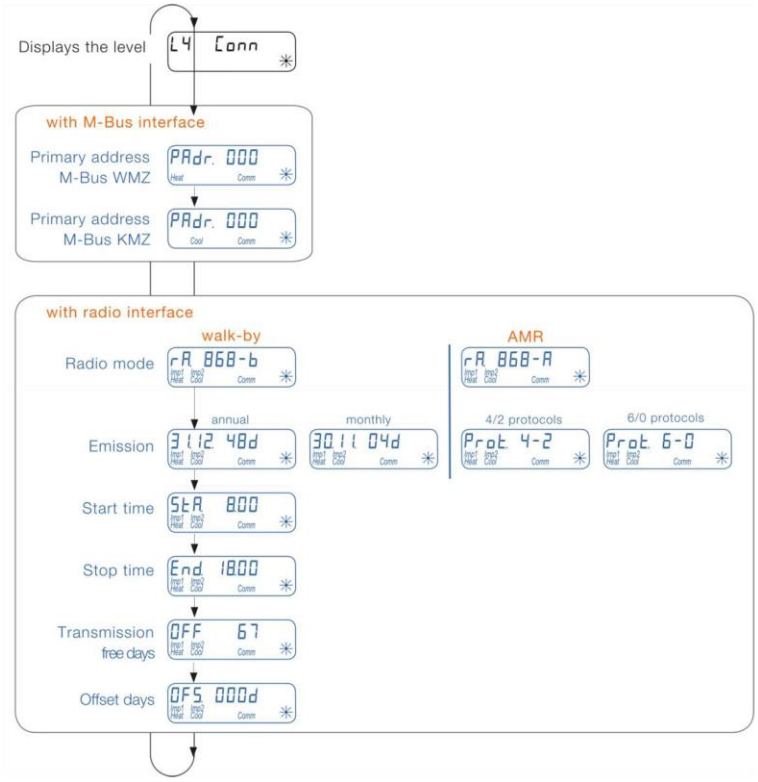


Level L3
Parameters



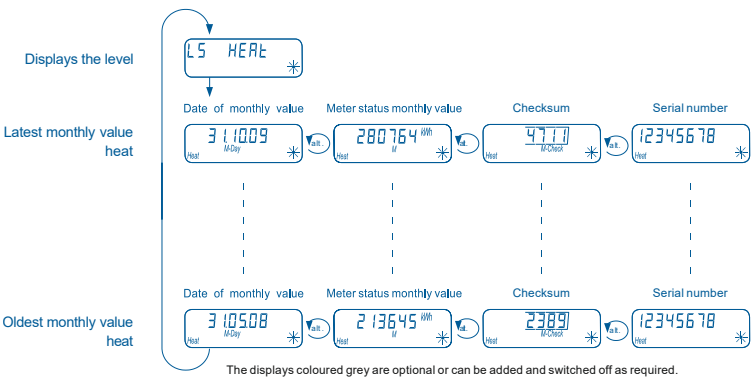
Level L4
Connections

These segment blocks appear depending on the meter's configuration



Level L5
Monthly values heat

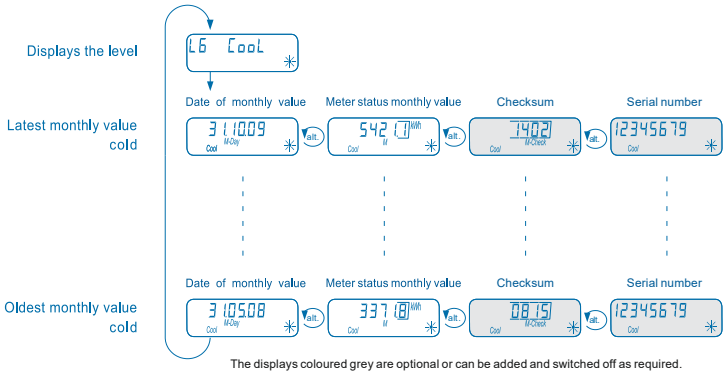
This level is displayed only when the meter is configured for metering heat.



Level L6

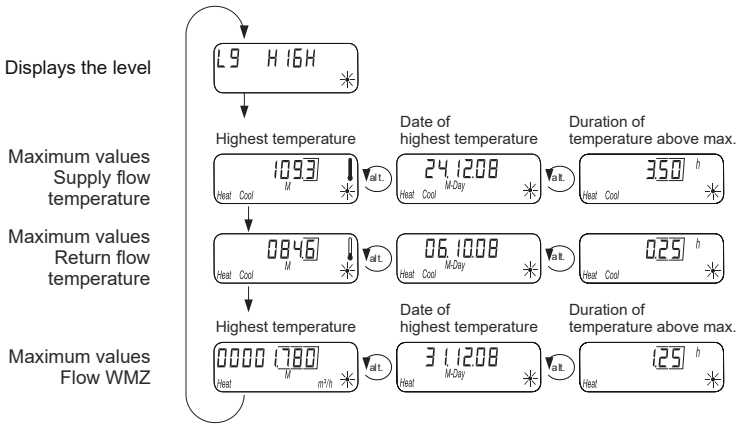
Monthly values cooling energy

This level is displayed only when the meter is configured for metering cooling energy.



Level L9

Maximum values

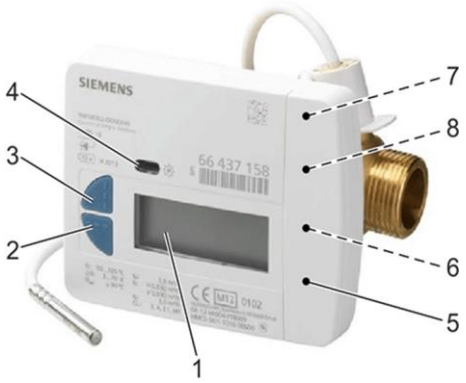


Operating states and status displays

Detailed information on operating states and status displays is available under 'Product documentation [▶ 21]', operating instructions A6V10816676.

Processor unit

The meter's processor is designed as follows:



1	LCD	5	Interface cover
2	Button to change between levels	6	Module interface
3	Button to navigate on a level	7	Fixing holes for external add-on modules
4	IrDA interface	8	User protection and sockets for external cable connections

The processor's ambient temperature cannot exceed 55 °C. Avoid direct sunlight.

Depending on the version (compact or removable meter), the processor can be removed from the flow measuring section to be fitted on the wall with the mounting bracket at a distance of 40 cm.

NOTICE	
!	Do not directly mount the process on meters with cooling option (condensation)

Add-on modules

The external add-on module (WFZ..) can be fitted to any meter that cannot communicate to the outside, e.g. WFM50...

To do this, proceed as follows:

- a) Remove the interface cover from the heat meter
- b) Plug in the add-on module and secure it

Shortly after fitting, the add-on module identifies automatically the type of meter and makes the required alignment (series number, monthly values, due day, current value and type of medium).

Wireless meters

ACT50 read out and parameterization software configures the wireless modules.

Wireless operation is activated via WTT726-FE7300 mobile read out and parameterization software, the the WFZ-PS radio telegram tool, or the ACT50 read out parameterization software.

Wired meters

Since the M-bus module adopts all parameters from the meter, only the primary address can be configured via the M-bus system.

The power required for operation is supplied by the M-bus system, but the module is equipped with a battery. It powers the module when there is no power available from the M-bus.

The modules do not affect the acquisition of consumption data and, for this reason, can be retrofitted at any time without damaging the seal.

Device sealing

After mounting the meter, seal all components to prevent tampering (observe national regulations):

- The flow measuring section with its fitting (inlet)
- The flow temperature sensor with the ball valve or the protection pocket, the protection pocket with the pipe and, if required,
- The module with the processor

Type summary

Features of the impeller type meters listed below:

Mounting location	In return
Design	Processor combined with flow measuring section
Rated pressure	PN 16
Sensor mounting	Return sensor, integrated in the flow measuring section
Sensing type	Pt1000, Ø 5.0 mm, length 45 mm
Temperature sensor cable length	1.5 m
Communication	IrDA interface
Threshold value for:	
● Acquisition of heating	0.2 K
● Acquisition of cooling energy	0.2 K
Due date	31.12
Display	kWh

Heat meter

Order number	Type	Description
S55561-F177	WFM501-E000H0	0.6 m^3/h, mounting length 80 mm, connecting thread G ¾"
S55561-F178	WFM502-E000H0	1.5 m^3/h, mounting length 110 mm, connecting thread G ¾"
S55561-F179	WFM503-J000H0	2.5 m^3/h, mounting length 130 mm, connecting thread G 1"

Combined heat/cooling energy meters and additional types available on request.

Add-on modules

Order number	Type	Description
S55563-F131	WFZ51	M-bus module
S55563-F153	WFZ662	RF add-on module in S-Mode
S55563-F165	WFZ662C	RF add-on module in C-Mode
S55563-F172	WFZ662CE	RF add-on module in C-mode data transmission as per OMS security profile with AES-128 encryption to Security mode 5

Installation sets, ball valves

Order number	Type	Description
JXF:HMXIK001-001	HMXIK001-001	Installation set Rp ½", consisting of: 2 ball valves Rp ½" with coupling nut G ¾" and flat gasket 2 mm, ¾" 1 ball valve Rp ½" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK001-002	HMXIK001-002	Installation set Rp ¾", consisting of: 2 ball valves Rp ¾" with coupling nut G ¾" and flat gasket 2 mm, ¾" 1 ball valve Rp ¾" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK001-003	HMXIK001-003	Installation set Rp 1", consisting of: 2 ball valves Rp 1" with coupling nut G ¾" and flat gasket 2 mm, ¾" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK001-004	HMXIK001-004	Installation set Rp 1", consisting of: 2 ball valves Rp 1" with coupling nut G 1" and flat gasket 2 mm, 1" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK001-005	HMXIK001-005	Installation set Rp ¾", consisting of: 2 ball valves Rp ¾" with coupling nut G 1" and flat gasket 2 mm, 1" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm

Installation sets fittings

Order number	Type	Description
JXF:HMXIK002-001	HMXIK002-001	Installation set Rp ½", consisting of: 2 fittings Rp½" with coupling nut G¾" and flat gasket 2 mm, ¾" 1 ball valve Rp ½" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK002-002	HMXIK002-002	Installation set Rp ¾", consisting of: 2 fittings Rp ¾" with coupling nut G ¾" and flat gasket 2 mm, ¾" 1 ball valve Rp ¾" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm

Order number	Type	Description
JXF:HMXIK002-003	HMXIK002-003	Installation set Rp 1", consisting of: 2 fittings Rp 1" with coupling nut G ¾" and flat gasket 2 mm, ¾" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK002-004	HMXIK002-004	Installation set Rp 1", consisting of: 2 fittings Rp 1" with coupling nut G 1" and flat gasket 2 mm, 1" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm
JXF:HMXIK002-005	HMXIK002-005	Installation set Rp ¾", consisting of: 2 fittings Rp ¾" with coupling nut G 1" and flat gasket 2 mm, 1" 1 ball valve Rp 1" with M10x1 mm for fitting temperature sensor Ø5.0x45 mm

Spacers

Order number	Type	Description
JXF:FKM0070	FKM0070	Spacer G ¾", length 80 mm
JXF:FKM0074	FKM0074	Spacer G ¾", Length 110 mm
JXF:FKM0075	FKM0075	Spacer G 1", Length 130 mm

Adapter pieces

Order number	Type	Description
JXF:HMXIK003-001	HMXIK003-001	Adapter set G ¾" to 1", consisting of: 2 adapter pieces G ¾" to G 1" 2 flat gaskets 2 mm, 1"
JXF:HMXIK003-002	HMXIK003-002	Extension set G ¾" x G 1", consisting of: 2 extension set from 110 mm, G ¾" to 130 mm G 1" 2 flat gaskets 2 mm, 1"

Order number	Type	Description
JXF:HMXIK003-003	HMXIK003-003	Extension set 110 mm G ¾" to 130 mm G ¾", consisting of: 1 extension 27 mm 2 flat gaskets 2 mm, ¾" 1 gasket made of copper ¾" x 1.5 mm
JXF:HMXIK003-004	HMXIK003-004	Extension set 110 mm G ¾" to 165 mm G ¾", consisting of: 1 extension 27 mm 1 extension 42 mm 2 flat gaskets 2 mm, ¾" 1 gasket made of copper ¾" x 1.5 mm
JXF:HMXIK003-005	HMXIK003-005	Extension set 110 mm G ¾" to 190 mm G 1", consisting of: 2 extension set from 110 mm G ¾" to 190 mm G 1" 2 flat gaskets 2 mm, 1" 1 gasket made of copper ¾" x 1.5 mm

Fittings

Order number	Type	Description
JXF:FKM0018	FKM0018	Fittings R ½" x G ¾", without gasket
JXF:FKM0019	FKM0019	Fittings R ¾" x G ¾", without gasket
JXF:FKM0020	FKM0020	Fittings R 1" x G ¾", without gasket
JXF:FKM0021	FKM0021	Fittings R ¾" x G 1", without gasket
JXF:FKM0022	FKM0022	Fittings R 1" x G 1", without gasket

Ball valves

Order number	Type	Description
JXF:FKM0023	FKM0023	Ball valve Rp ½" with temperature sensor fitting M10x1 mm for sensor Ø5.0x45 mm
JXF:FKM0024	FKM0024	Ball valve Rp ¾" with temperature sensor fitting M10x1 mm for sensor Ø5.0x45 mm
JXF:FKM0025	FKM0025	Ball valve Rp 1" with temperature sensor fitting M10x1 mm for sensor Ø5.0x45 mm
JXF:FKM0076	FKM0076	Ball valve Rp ½" with coupling nut G ¾" and temperature sensor fitting M10x1 mm for Sensor Ø5.0x45 mm, without gasket
JXF:FKM077	FKM0077	Ball valve Rp ½" with coupling nut G ¾", without gasket

Order number	Type	Description
JXF:FKM0078	FKM0078	Ball valve Rp 1" with coupling nut G ¾", without gasket
JXF:FKM0079	FKM0079	Ball valve Rp ¾" with coupling nut G 1", without gasket
JXF:FKM0080	FKM0080	Ball valve Rp 1" with coupling nut G 1", without gasket

Ordering

Specify the quantity, order number, and type when ordering.

Example:

Order number	Type	Description
S55561-F177	WFM501-E000H0	0.6 m^3/h, mounting length 80 mm, connecting thread G ¾"

Delivery

The meters come complete with operating and installation instructions in different languages as well as all required mounting materials (gaskets, seals, etc.).

The RF add-on module is delivered in packages of 1 items (1 packaging unit).

Installation instructions are supplied with each packaging unit in various languages as well as cable seals and mounting screws.

Languages

The Installation Instructions are supplied in the following languages:

Bulgarian, German, English, Finnish, French, Greek, Italian, Croatian, Lithuanian, Dutch, Norwegian, Polish, Romanian, Slovakian, Slovenian, Spanish, Czech, Turkish, and Hungarian.

Remote readout options

Order number	Type	Description
S55563-F157	WTT662-BA1100	Network nodes can only receive telegrams in S-mode and C-mode (Security mode ≤ 5)
S55563-F164	WTT568-AF0305	The M-bus wireless gateway can remotely read out devices communicating via network nodes that communicate in S-mode and C-mode (Security Mode ≤ 5)
S55563-F149	WTX660-E05060	The wireless converter can receive encrypted telegrams in S-mode, C-mode, and T-mode (Security Mode 5 and 7)
S55563-F166	WTV776-HB6035	The IoT-Gateway can remotely read encrypted devices that communicate in S-mode, C-mode, and T-mode (Security mode 5 and 7)

Accessories

Order number	Type	Description
JXF:FKS0005	FKS0005	Flat gasket ¾", thickness 2 mm
JXF:FKS0006	FKS0006	Flat gasket 1", thickness 2 mm
JXF:FKM0035	FKM0035	T-piece R ½" x G ¼"
JXF:FKM0036	FKM0036	T-piece R ¾" x G ¼"
JXF:FKM0037	FKM0037	T-piece R 1" x G ¼"
JXF:FKM0038	FKM0038	Protection pocket G ¼" for sensor Ø5.0 x 45 mm, without gasket
JXF:FKM0051	FKM0051	Protection pocket M10x1 mm for sensor Ø5.0x45 mm, without gasket
JXF:FKM0049	FKM0049	Temperature sensor sleeve G ¼" for sensor Ø5.0x45 mm and Ø5.2x45 mm
JXF:FKM0050	FKM0050	Temperature sensor sleeve M10x1 mm for sensor Ø5.0x45 mm and Ø5.2x 45 mm
JXF:HMXIK004-001	HMXIK004-001	Temperature sensor screwed made of brass for sensor Ø5.0 mm and Ø5.2 mm, directly or indirectly immersed
JXF:HMRIK001-001	HMRIK001-001	Wall bracket for WFx5 Heat meter
JXF:FNS0001	FNS0001	Seal, wire length 250 mm
JXF:BOZ5005	BOZ5005	Temperature sensor accessory set for 5.0 and 5.2 mm temperature sensors consisting of fittings, gasket, and lead seal.

Programming and readout accessories

Order number	Type	Description
JXF:ACT60	ACT60	Readout and parameterization app for WTT726-FE7300
JXF:ACT20	ACT50	Readout and parameterization software
S55563-F161	WTT726-FE7300	Mobile parameterization and readout tool for ACT60
		Key Handling Portal
		Key Management Assist App
JXF:WFZ.PS	WFZ.PS	Triggering tool for radio telegrams

Product documentation

Topic	Title	Document ID
Mounting, operation	Impeller and capsule type heat/cooling energy meters and RF add-on modules WFx6.., WFx5.., WMx5.., WFZ662..	A6V10816676
Data sheet	RF impeller heat/cooling energy meter set WFx6..	A6V11259309
User's guide	Key Handling Portal	A6V15062322
User's guide	Key Management Assist App	A6V15062326
Data sheet	Mobile parameterization and readout tool for ACT60	A6V12732504

Related documents such as environmental declarations, CE declarations, etc., can be downloaded at the following Internet address:

http://siemens.com/bt/download

Notes

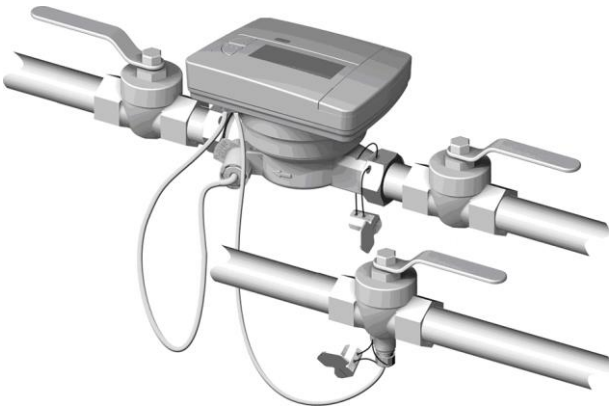
Mounting

Meter installation

- Thoroughly flush the plant prior to installing the meter.
- The meter can be mounted in any position (exception: installation above head is not allowed).
- The installation location (return or flow) is based on meter type.
- Settling paths are not required, neither upstream of nor downstream from the meter. If the meter is installed in the common return of 2 heating circuits (e.g. space heating and DHW), the mounting location must be at an adequate distance from the T-piece (min. 10 x DN) to allow the different water temperatures to properly mix.

Flow measuring section

- Mount the flow measuring section between two shutoff valves with the arrow on the measuring section pointing in the direction of flow.
- The sensors must be mounted in the same water circuit as the flow measuring section (observe mixing).
- The sensors can be fitted in T-pieces or ball valves, or can be immersed, either directly or in pockets (observe all national regulations).
- In any case, the end of the sensors' probe must extend to at least the pipe center.
- Temperature sensors and fittings must be sealed to prevent tampering.



Mounting with ball valves

Maintenance

The meters are maintenance-free. Comply with all national calibration regulations.

Disposal

	This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to Siemens information on disposal.

Warranty service

Technical data on specific applications are valid only together with Siemens products listed in this data sheet. Siemens rejects any and all warranties in the event that third-party products are used.

Processor unit

Power supply	
Battery type	Lithium battery CR AA (cannot be replaced)
Number of batteries	1 pc.
Battery voltage	3.0 V
Battery life	Measuring cycle every 36 s: Up to 10 years with reserve [1] Measuring cycle every 6 s: Up to 6 years with reserve [1]

[1] Actual battery life depends an operating state and external factors.

Operating data	
Measuring range	
• Heat meter	10...105 °C
• Optional cooling range	0.2…24 °C
Temperature differential range Δ t	3...70 K
Temperature response threshold	
• Heating	0.2 K
• Cooling	0.2 K
Thermal coefficient	Shifting compensated

Temperature sensors	
Sensing element	Pt1000 per EN 60751
Mechanical design	Type DS (installed directly)
Diameter	Ø 5.0 x 45 mm (standard)
Cable length	1.5 m (standard) (3 m optional)

Display	
Display	8-digit LCD + pictograms
Energy display based on device configuration	kWh/MWh (kWh: Decimal with 1 decimal place) (MWh: Decimal with 3 decimal places) MJ / GJ (MJ: Decimal with 1 decimal place) (GJ: Decimal with 3 decimals)

Communication		
Optical interface	Basic design	Relying on EN 62056-21
	Protocol	

Flow measuring section Screw-type water meter				
Temperature range (national approvals may differ)	10...90 °C			
Maximum temperature tmax.	90 °C			
Nominal pressure (max. permissible operational pressure)	16 bar (PN 16)			
Min. system pressure to prevent cavitation	1.1 bar	1.1 bar	1.3 bar	1.1 bar
Nominal flow qp (m³/h)	0.6	1.5	1.5	2.5
Mounting length (mm)	110	80	110	130
Connection	G ¾ B	G ¾ B	G ¾ B	G 1 B
Meteorological class (qp/qi).				
Horizontal	01:50	01:50	01:50	01:50
Vertical	01:25	01:50	01:50	01:50
Maximum flow qs (m³/h)	1.2	3.0	3.0	5.0
Minimum flow qi				
Horizontal	12	30	30	50
Vertical	24	30	30	50
Ratio qs/qi	2:1			
Threshold (l/h)	3...4	4…5	4…5	6…7
Pressure drop at qp				
● Mounting length 80 mm Δp (mbar)	-	200	-	-
● Mounting length 110 mm Δp (mbar)	200	-	200	-
● Mounting length 130 mm Δp (mbar)	-	-		180
Flow rate at Δp = 1 bar, Kv (m³/h)	1.5	3.2	3.1	5.3
Mounting position	Horizontal/vertical			
Connecting cable - processor to volume measuring element	40 cm			

Communication

M-bus module WFZ51	
M-bus slave interface	As per EN 1434-3 and EN 13757-2 /-3
• Battery type	Lithium battery CR 2/3 AA
• Battery voltage	DC 3.0 V
• Battery life	Up to 11 years [1]
• Standby current	≤1.5 mA
• Standard load	1.5mA
• Addressing	Primary or secondary
• Baud rate	300 or 2400 baud
• Polarity	Any
• Galvanic isolation	Per module interface
• Cable length	2.95 m
• Degree of protection	IP65
• Protection class	III

RF add-on modules WFZ662, WFZ662C and WFZ662CE	
• Battery type	Lithium battery CR 2/3 AA
• Battery voltage	DC 3.0 V
• Battery life	Up to 11 years [1]
• Frequency	S-mode: 868.3 ±0.3 MHz; C-mode: 868.95 ±0.25 MHz
• Standards	Data transmission per EN 13757-4
• Transmission power, typical	Max. 10 dBm
• Degree of protection	IP65
• Protection class	III

[1] Actual battery life depends an operating state and external factors.

Housing type	
Protection class	III
Degree of protection	
• Processor unit	IP65 per EN 60529
• Flow measuring section	IP65 per EN 60529

Environmental conditions			
	Operation	Transportation	Storage
Temperature	5...55 °C	-25...+70 °C	-5...+45 °C
Humidity	<95 % r.h. at 25 °C (non-condensing)	<95 % r.h. at 25 °C (non-condensing)	<95 % r.h. at 25 °C (non-condensing)

Standards and guidelines	
EU conformity (CE)	
Processor unit	See EU declaration of conformance *)
Heating media quality	VDI guideline 2035
Type approval as per	EN 1434-4 Electromagnetic class E1 Mechanical class M2 Environment class A Measuring accuracy class 3
Product standards	DIN EN 1434-1 (heat meters)
European Measuring Instruments Directive (MID)	2014/32/EU

*) The documents can be downloaded at http://siemens.com/bt/download.

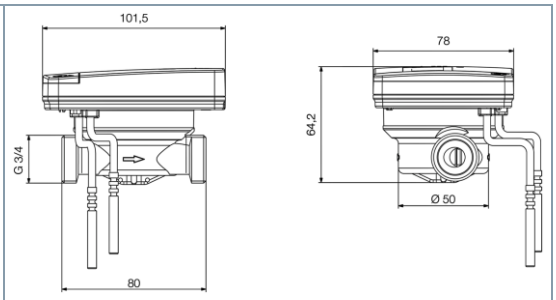
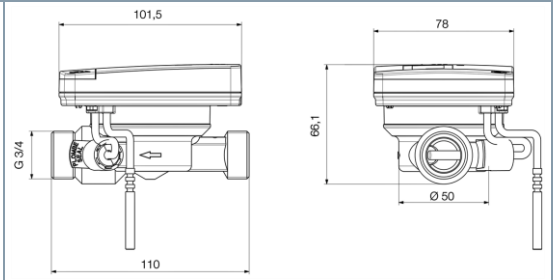
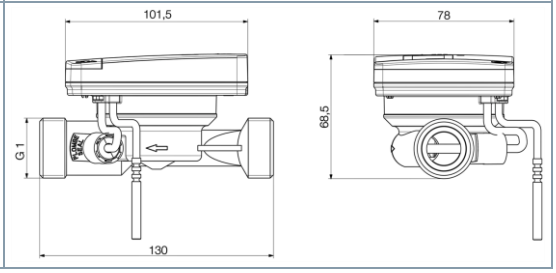
Environmental compatibility
The product environmental declaration *) contains data on environmentally compatible product design and assessments (RoHS compliance, material composition, packaging, environmental benefit, and disposal).

*) The documents can be downloaded at http://siemens.com/bt/download.

Material	
Dimensions (W x H x D)	
• Processor unit	101.5 x 78 mm
• Flow measuring section	See "Dimensions"
Processor housing	ABS + PC
Housing colors	RAL 9016

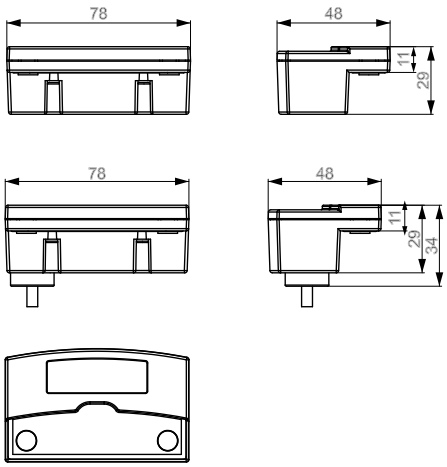
Weight (device packed complete with inserts)	
0.6 m³/h	971 g
1.5 m³/h	971 g
2.5 m³/h	910 g

Screw-on meter, compact

Mounting length 80 mm	
Mounting length 110 mm	
Mounting length 130 mm	

Dimensions in mm

Add-on modules



Dimensions in mm

European Union conformity

Contact for regulatory topics: (EU) Siemens AG, Berliner Ring 23, DE-76437 Rastatt

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Technical specifications and availability subject to change without notice.

Document ID CE2N5323_en

Edition 2026-03-19