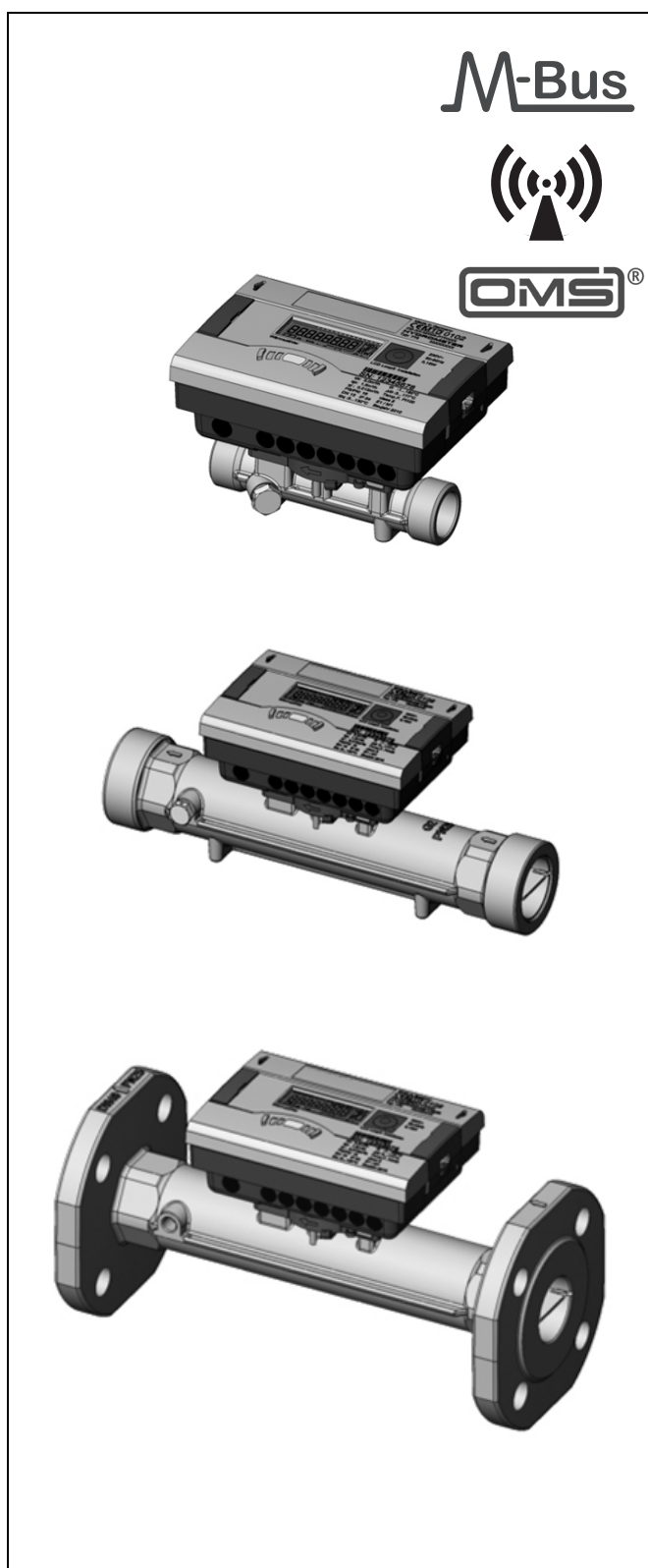


EW773 Series Ultrasonic Hydronic Meters DN15...100 FOR HEATING AND COOLING APPLICATIONS

PRODUCT DATA



CONTENTS

GENERAL	2
Application	2
Features	2
Design	2
Materials	2
Approvals	2
TECHNICAL DETAILS	2
Specifications	2
Flow Data	3
Function	3
Installation and Setup	4
Software	5
Communication and Readout	6
Typical Readout Applications	7
Identification	9
Dimensions	11
ORDERING DETAILS	12
Ordering Information	12
Scope of Delivery	13
Accessories	14
DIAGRAMS	16
Accuracy	16
Flow Diagram	16

GENERAL

Application

Honeywell EW773 Series ultrasonic meters are static compact heat or chilled water meters with electronic measurement based on the ultrasonic principle, consisting of an electronic energy calculator, an ultrasonic flow sensor and two temperature sensors.

They are used for metering of hydronic heating and/or cooling energy in hydronic systems based on volume, supply and return temperature.

EW7730 models are suitable for energy metering in heating systems ('heat metering').

EW7731 models are suitable for energy metering in heating, cooling or combined systems.

Features

- **Approval for ultrasonic meter with dynamic range of 250:1 (qp:qi) in class 2**
- **High battery efficiency, battery lifetime 11 years**
- **High long term stability, tested and verified by independent AGFW test**
- **Insensitive to dirt**
- **Optionally with integrated radio, Open Metering Standard, 868MHz**
- **Remote reading (AMR) with up to two add on plug & play modules**

Design

EW773 Series ultrasonic meters consist of:

- Electronic energy calculator with power supply and fixed or screwed cable connection to ultrasonic flow sensor
- Factory fitted supply and return temperature sensors
- Up to two communication modules (certain types only)
- Ultrasonic flow sensor with external threads according to ISO228 (DN15...DN40) or flanges PN25 (DN25...DN100)

Materials

- Front panel of energy calculator made of light grey plastic with laser markings for approval, flow and other product information
- Back panel of energy calculator made of black plastic with grommets for flow sensor, temperature sensor and communication cables
- Housing of ultrasonic flow sensor made of brass with black plastic housing for transducer connections and holding fixture for energy calculator. EW7731 versions with potted electronics

Approvals

- Heating: MID class 2 (DE-10-MI004-PTB013)

TECHNICAL DETAILS

Specifications

Sizes	DN15...DN100 qp1.5...60m ³ /h
Medium	Water, quality to VDI2035
Medium temperature	EW7730 DN15...20: 5...130°C EW7730 DN25...100: 5...150°C EW7731: 5...105°C
Ambient temperature	5...55°C
Storage temperature	-25...70°C
Operating pressure	Threaded versions: max. 16bar Flanged versions: max. 25bar
Protection class	IP54 IP68 (EW7731 flow sensor only)
Measuring process	Fully electronic compact heat meter with ultrasonic volume measurement
Display	LCD, 8-digit
Display units	MWh, kWh, GJ, Gcal, Mbtu, gal, GPM, °C, °F, m ³ , m ³ /h
Display values	99 999 999, 9 999 999.9, 999 999.99, 99 999.999
Values displayed	Energy, power, volume, flow rate, temperature and more
Measuring cycle volume	Battery supply: 1s Mains power supply: 1/8s
Measuring cycle temperature	A-cell battery: 16s D-cell battery: 4s Mains power supply: 2s
Temperature difference	3...177K
Starting temperature difference	0.125K
Absolute temperature measuring range	1...180°C
Temperature sensors	Pt500 with 2-wire leads
Operating voltage	3.6V
Ambient class	Class E1 + M1
Battery lifetime	11 years
Interfaces	Optical Optional interfaces can be installed in communication slots

Flow Data

Table 1. Flow rates EW773 Series

	DN	15	20	25/32	40	50	65	80	100
Flow rates according to MID									
Minimum (qi)	l/h	6	10	24	40 ⁽¹⁾ / 100	60 ⁽¹⁾ / 150	100 ⁽¹⁾ / 250	160	240 ⁽¹⁾ / 600 ⁽²⁾ / 1,200 ⁽³⁾
Nominal (qp)	m ³ /h	1.5	2.5	6	10	15	25	40	60
Maximum (qs)	m ³ /h	3	5	12	20	30	50	80	120
Dynamic range (qp/qi)		250:1	250:1	250:1	250:1	250:1	250:1	250:1	250:1
Additional flow data									
Starting flow rate	l/h	2.5	4	7	20	40	50	80	120
Overload flow rate	m ³ /h	4.6	6.7	18.4	24	36	60	90	132
Pressure loss @ qp	mbar	75	100	128	95	80	75	80	75

(1) When installed in horizontal position

(2) When installed in vertical or tilted position

(3) When installed upside down

Sizing

- EW773 Series Ultrasonic Hydronic Meters should be selected in such a way that typical system flow rates are between approved minimum (qi) and maximum flow rate (qs)
- Overload flow rate may be reached for not more than 15 minutes per day
- Flow rates below minimum and above maximum should be avoided

Function

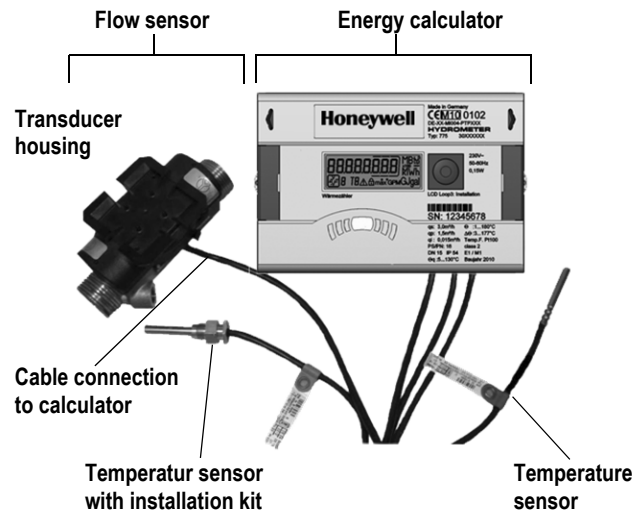


Fig. 1. EW773 components

Energy Calculator

The energy calculator records flow rate and temperature and calculates logs and displays data.

The calculator can be mounted directly onto the flow sensor or to the wall. The meter can be read out from a single line eight-digit display with units and symbols. A push button provides control of various display loops. All failures and faults are recorded automatically and displayed on the LCD screen. For protection all relevant data is saved in a nonvolatile memory (EEPROM). This memory saves measured values, device parameters and types of error at regular intervals.

Flow Sensor

The ultrasonic technology of the flow sensor permits very high measuring accuracy and can be used in the supply or return pipeline.

Standard place of installation is return pipeline. For installation in supply a different version has to be used. Meters cannot be reconfigured from return to supply pipeline usage in the field.

Standard cable length between calculator and flow sensor is

- 1.5m for meters up to qp6
- 3m for meters qp10-60

Other cable lengths are available on request.

Power Supply

Standard

- A-cell lithium battery 3.6V DC with 11 year nominal lifetime

Optional

- D-cell lithium battery 3.6V DC with 16 year nominal lifetime
- 24V AC mains power supply with integrated, replaceable backup battery
- 230V AC mains power supply with integrated, replaceable backup battery

Nominal lifetime relates to normal usage. Battery lifetime is decreased by shorter readout intervals, longer data telegrams, etc.

Temperature Sensors

EW773 Series ultrasonic meters are supplied with installed Pt500 temperature sensors with 2-wire leads, Ø5.2 x 2,000mm. The temperature sensors are installed to the meter with screw terminals and can be replaced by longer versions.

Temperature sensors may only be changed in pairs.

See chapter “Accessories” further below.

Interfaces / Communication Slots

EW773 Series ultrasonic meters are equipped with a ZVEI optical interface for communication and testing as standard. EW773xF versions additionally have an 868MHz RF module on board. All meters further have two communication slots which can be occupied with plug and play modules. For more details on interface modules see chapter “Communication and Readout” below.

In configuration example below communication slot 1 is occupied and slot 2 is free.

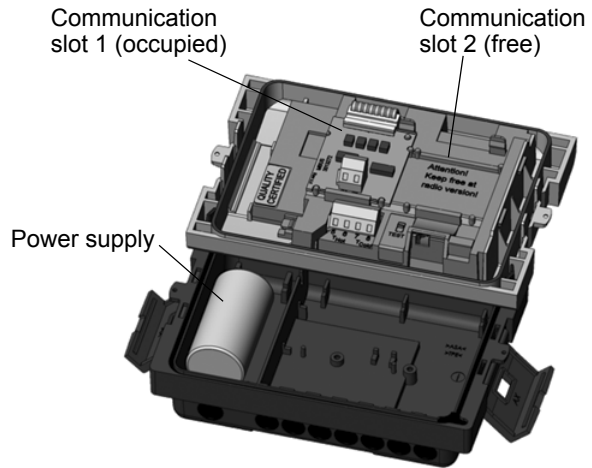


Fig. 2. Internal design

Installation and Setup

Flow Sensor

EW773 Series ultrasonic meters must be installed in the correct pipeline. When installed in the wrong pipeline measurements are either unreliable, inaccurate or non-existent.

Pipeline configuration cannot be changed in the field.

The correct pipeline can be determined by comparing the OS-Number or by looking up in service loop of the meter

- Meters with OS-Numbers ending between ‘00’ and ‘49’ are configured for installation in the return, for example ‘EW7730A1200’ or ‘EW7731M7024’
- Meters with OS-Numbers ending between ‘50’ and ‘99’ are configured for installation in the supply, for example ‘EW7730K1250’ or ‘EW7730K1273’
- Calming legs before or after meters are not required but a calming leg of 3 x DN before meters is recommended for flow stabilisation
- All sizes may be installed in any position
- Avoid installation at highest point of system or system part as air may be trapped in meter
- It is recommended to place a ball valve before and after the heatmeter for easy replacement
- Connection fittings are available for sizes DN15...DN40
- For ball valves, connection fittings and a cross reference for which type to use see Accessories on page 14f

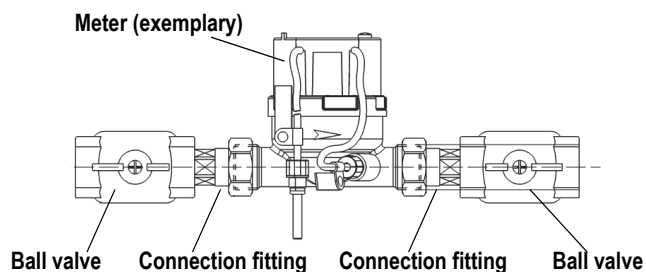


Fig. 3. Flow sensor installation

Temperature Sensors

- Temperature sensors have to be installed like for like. Example: if one temperature sensor is installed directly in the flow, the second temperature sensor also has to be installed directly in the flow
- Temperature sensors may only be installed directly in the flow or, for larger sizes, with MID approved sensor pockets. See Accessories
- Sensor pockets can also be used for smaller sizes, although installation directly in the flow is preferred
- Various fittings and other accessories are available for sensor installation, see Accessories on page 14f

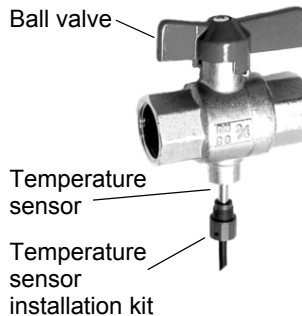


Fig. 4. Temperature sensor Installation with ball valve

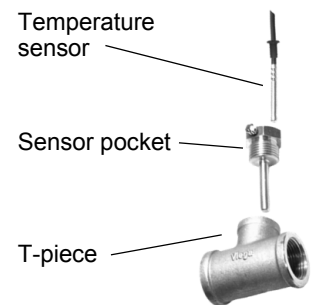


Fig. 5. Temperature sensor Installation with sensor pocket

Medium

Heat meters generally are only approved for metering of water and not for water glycol mixtures or other fluids other than water. During measurement meter must be completely filled with water.

Medium Temperature

Max. medium temperatures are as follows:

- 130°C when horizontally mounted and transducers (black plastic housing on flow sensor) turned sideways for DN15 and DN20, or
- 150°C when horizontally mounted and transducers turned sideways for sizes DN25...80
- 120°C when horizontally mounted and transducers turned upwards
- 120°C when vertically mounted

Max. medium temperature for all EW7731 is 105°C.

In any case calculator must be separated from flow sensor if medium temperature exceeds 90°C

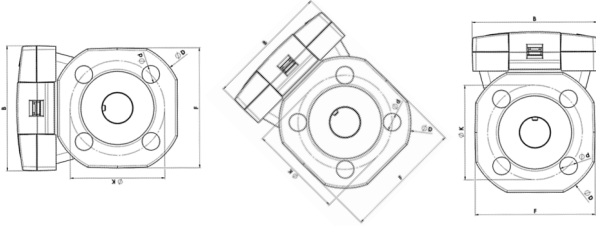


Fig. 6. Horizontal installation with counter showing sideways (preferred), 45° up (recommended minimum) and upwards (not recommended)

Software

In general it is not necessary to parametrise EW773 meters in the field unless standard values should be changed, for example pulse value for a meter with pulse output module. Such changes can be done with the IzarSet software. IzarSet is available in two versions:

- IzarSet Standard allows modification of primary and secondary address as well as some due dates and tariffs
- IzarSet Expert allows further settings, for example display contents and order of appearance and advanced meter configuration

Calculator

Calculator can be installed on or separate from meter, for example with wall mounting plate which is supplied with meter as standard or with other mounting plates available as accessory

- Flow sensor and calculator of meters up to qp6 are connected by a permanently fixed cable with a length of 1.5m which may not be shortened, cut or manipulated in any way
- Cable between flow sensor and calculator of meters qp10 and larger has to be installed in the field
- Calculator must be separated from flow sensor if medium temperature exceeds 90°C

The IzarSet software is available free of charge from <http://metering.ecc.emea.honeywell.com/>. To activate Expert functions a USB dongle (EWP3021322) is required which is not free of charge and must be purchased separately.

Communication and Readout

EW773 Series ultrasonic meters have an optical interface on the front panel and two internal communication slots which can be fitted with plug and play modules. Some EW773 models are factory fitted with modules so that one or both slots are occupied. Empty slots can be retrofitted with modules. Possible module combinations are shown in Table 2 further below. Not all models are available in all sizes.

Model	Communication slot configuration	OS# starting	Sizes available
A type: freely configurable	Slot 1: empty Slot 2: empty	EW7730A EW7731A	DN15...100 DN15...100
F type: with RF onboard	Slot 1: empty Slot 2: unused	EW7730F EW7731F	DN15...20 DN15...20
K type: for loop through applications	Slot 1: pulse input module Slot 2: M-Bus module	EW7730K EW7731K	DN15...20 none
M type: for M-Bus networks	Slot 1: M-Bus module Slot 2: empty	EW7730M EW7731M	DN15...25 DN15...100

Communication Options

Optical interface on front panel

Included as standard in all EW773 Series ultrasonic meters. ZVEI interface, M-Bus protocol, for readout and parametrisation. Required for access to meter:

- Bluetooth optohead (EWA3001799)
- PC with IzarSet software, or

Optional onboard RF module

Transmission interval 12...20 seconds (depending on telegram length), suitable for walk by, drive by and fixed RF networks. Open Metering Standard protocol, frequency 868MHz. RF module is on board and not retrofittable.

M-Bus interface module (EWA3022071)

Configurable telegram, according to EN13757-3, data reading and parametrisation via two wires with polarity reversal protection, auto baud detection (300 and 2400 baud), 2 M-Bus connections with 2 primary addresses.

Pulse output module (EWA3022073)

Module with 2 Open Collector pulse outputs (potential free), output 1: 4 Hz (pulse width 125ms), pulse or static conditions (e.g. errors), output 2: 100 Hz (pulse width 5ms), ratio: pulse duration / pulse break ~ 1:1, configurable with IzarSet software.

Pulse input module (EWA3022074)

Module with 2 pulse inputs, max. 20Hz, configurable with IzarSet software, remote data transfer.

Combined pulse in-/output module (EWA3022075)

Module with 2 pulse inputs and 1 pulse output, configurable with IzarSet software, required for leak detection.

RS232 interface module (EWA3028129)

Serial interface for communication with external devices. Special data cable included. M-Bus protocol, 300 and 2400 baud.

RS485 interface module (EWA3022101)

Serial interface for communication with external devices, power supply with 12V ±5V, M-Bus protocol, 2400 baud.

Analogue output module (EWA3022106)

Module for 4 ... 20 mA with 2 programmable passive outputs, programmable value in case of error. Field retrofittable only to EW773 meters with two free communication slots as this module occupies both communication slots and can therefore only be combined with RF (which is on board and does not occupy any slot).

Not all module combinations are possible. The following table gives an overview of possible combinations:

Table 2. Module combinations

Slot 1	Slot 2					
	RF	No module	M-Bus	Pulse in	RS232	RS485
No module	•	•				
M-Bus	•	•	•		•	•
Pulse out	•	•	•	•	•	•
Pulse in	•	•	•		•	•
Pulse in/out	•	•	•		•	•
RS232	•	•				
RS485	•	•				
Analogue	•	•				

NOTE: All modules except RF can be retrofitted. RF module is on board and not retrofittable Approval of meter is not affected when modules are retrofitted

Typical Readout Applications

Following configuration examples are not all available in all sizes.

Direct Readout

The meter is visited at its point of installation, consumption values are read off the display and recorded manually.



Recommended model: EW773xA

No communication module is required. If at a later time remote readout is required the EW773xA can be retrofitted with suitable modules.

Alternatives

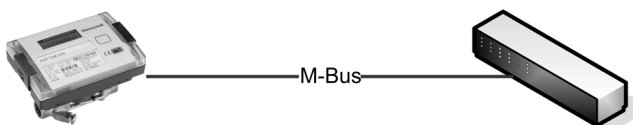
Any EW773 Series ultrasonic meter allows direct readout over the display.

Wired M-Bus Network

The meter is attached to a wired M-Bus network which allows remote configuration and readout over the M-Bus master.

Recommended model: EW773xM

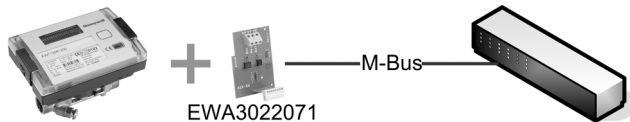
The factory fitted M-Bus module allows direct wiring to M-Bus networks.



Alternative 1: EW773xA + EWA3022071

In the field the EW773xA is equipped with M-Bus module EWA3022071 which provides the same functionality.

This configuration is available for all sizes and applications.



Alternative 2: EW773xK

EW773xK is equipped with both an M-Bus and a pulse input module which also allows direct wiring to M-Bus networks.

Wireless Networks

Generally there are three kinds of wireless networks:

- Wired M-Bus networks which use RF links for selected parts of the network. Normally an RF capable meter transmits to RF/M-Bus converter EW535M0131 which in turn is wired to an M-Bus master unit
- Mobile RF networks, also called 'walk by' or 'drive by' networks. An RF capable meter is read out by a person periodically walking or driving past the meter and equipped with a suitable receiver
- Fixed RF networks. An RF capable meter is read out by a permanently installed receiver which automatically transmits the data on to an FTP server

All wireless networks mentioned above use the same kind of meter, i.e. all RF capable meters listed below are suitable for use in partially wireless M-Bus networks as well as mobile and fixed RF networks.

However, please note that Honeywell metering components with RF capability use the OMS protocol (Open Metering System) and 868MHz frequency. Although the OMS protocol ensures interoperability between components of different manufacturers Honeywell cannot be held liable for connectivity to equipment of other manufacturers.

Recommended model: EW773xF

The meter is equipped with an on board RF module which enables the meter to be attached to a suitable RF network.



There is no retrofittable internal RF module for EW773. For retrofit situations or for sizes not covered by EW773xF an alternative has to be used.

Alternative 1: EW773xM + EW9100AEZ001

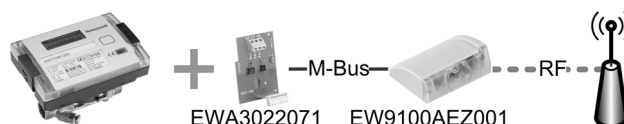
The factory fitted M-Bus module in slot 1 allows direct wiring to external RF transmitter EW9100AEZ001..



Alternative 2: EW773xA + EWA3022071 + EW9100AEZ001

The meter is equipped with M-Bus module EWA3022071 and wired to external RF module EW9100AEZ001.

This configuration is available in all sizes for all applications.



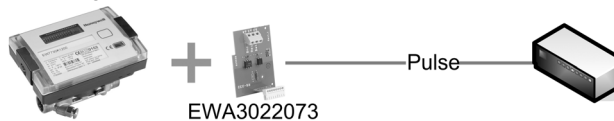
Pulse Output Signal

The meter is attached to another device which is capable of counting pulses or a converter which converts the pulses into another signal

Recommended model: EW773xA + EWA3022073

The EW773xA is equipped with pulse output module EWA3022073 which enables it to transmit two pulses. Pulse unit and value are programmable with IzarSet software and BT optohead EWA3001799.

This configuration is available for all sizes and applications.



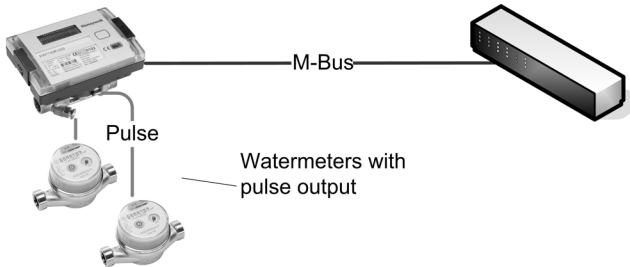
NOTE: EW773xL has a factory fitted pulse output module and is therefore also suitable for applications which require pulse output. However, please note that the L model is only available for installation in the supply.

Networks with LoopThrough Devices

The meter is attached to a wired or wireless network. Up to two other devices with pulse output can be read out via the EW773 and the values transmitted down the network together with the EW773's own metering data. Each device is recognised as a separate device.

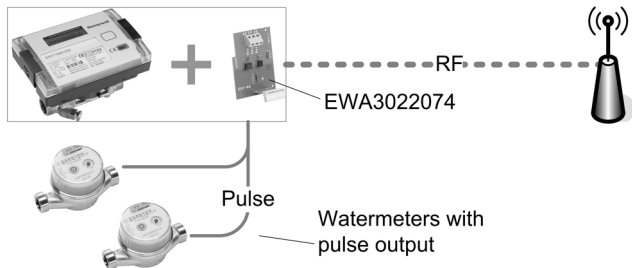
Recommended M-Bus model: EW773xK

The factory fitted M-Bus module allows direct wiring to M-Bus networks. The factory fitted pulse input module allows wiring of up to two devices with pulse output into the EW773, for example a cold and a warm water meter.



M-Bus alternative 1: EW773xM + EWA3022074

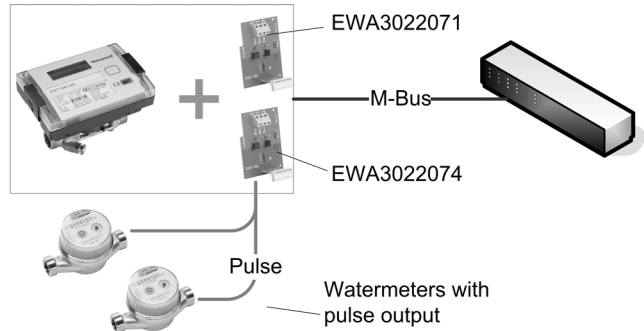
The factory fitted M-Bus module allows direct wiring to M-Bus networks. A pulse input module EWA3022074 is field installed.



M-Bus alternative 2: EW773xA + EWA3022071 + EWA3022074

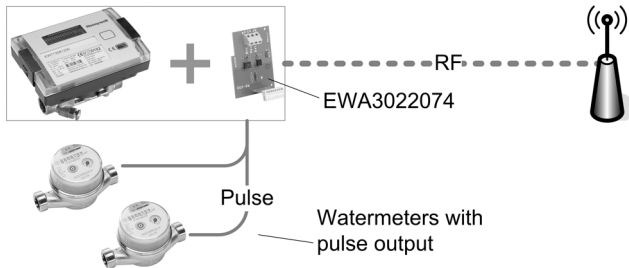
An M-Bus module EWA3022071 and a pulse input module EWA3022074 are field installed.

This configuration is available for all sizes and applications.



Recommended RF model: EW773xF + EWA3022074

The factory fitted on board RF module enables the meter to be attached to an RF network using a suitable frequency and protocol. The meter is equipped with pulse input module EWA3022074 which allows wiring of up to two devices with pulse output into the EW773.



Setup

Onboard RF

No field setup required at meter. RF is activated automatically when meter is filled with water first time. RF can be de- and reactivated with IzarSet Expert.

M-Bus Module

No field setup required at meter itself. M-Bus parametrisation, for example primary address setting, can be done via M-Bus master unit.

Other Modules

Module setup is done with IzarSet Expert.

Identification

All data given in this data sheet is only valid for the current generation.

Current Generation ('EW773 Type 775')

- Grey Honeywell logo and OS-Number starting with 'EW773...' lasered onto front panel
- 'Type 775' printed under approval mark in top right corner
- 8-digit LCD display
- Light grey front panel with black brackets on either side
- Black housing
- CE marking and MID approval in top right corner
- Serial number and meter specs in bottom right corner

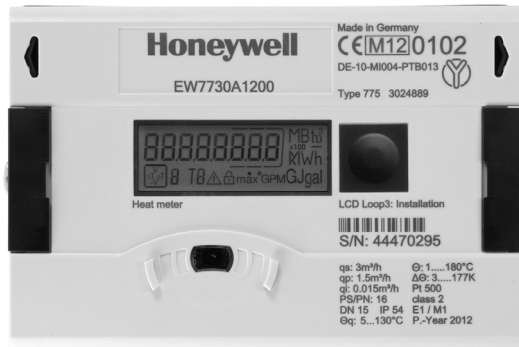


Fig. 7. Top view of EW773 (Type 775)

Previous Generation ('EW773 Type 773')

- Red Honeywell logo right hand of display
- OS-Number starting with 'EW773...' on label behind window on front panel
- 'Type 773' printed under specs in bottom left corner
- 7-digit LCD display
- Transparent plastic front panel with light grey sticker and black brackets on either side
- Black housing
- Red CE marking and push button outline
- MID approval, serial number and meter specs on label behind windows in bottom left corner/centre

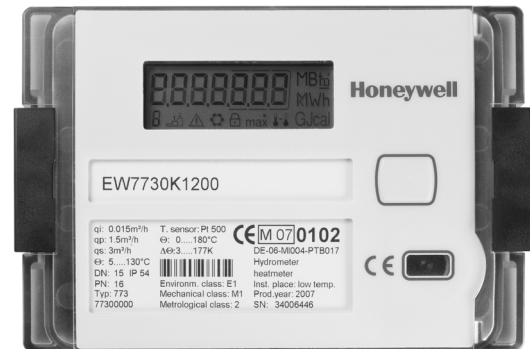


Fig. 8. Top view of EW773 (Type 773)

Front Panel Contents

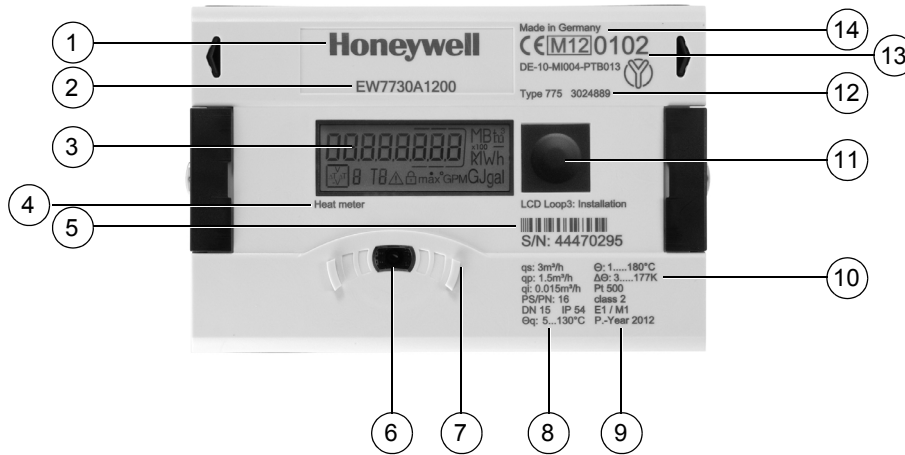


Fig. 9. EW773 front panel elements

Number	Element	Details
1	Honeywell logomark	
2	OS-Number	Refers to Honeywell order specification
3	Eight digit display	
4	Meter	<ul style="list-style-type: none"> EW7730: "Heat meter" EW7731: "Heat meter with cooling tariff"
5	Installation and S/N	<ul style="list-style-type: none"> Installation place: "LCD loop 3" refers to the display loop where the installation place is listed S/N = eight digit serial number as barcode and clear text
6	Optical interface	Optical interface for meter readout or parametrisation. For use with Bluetooth optohead EWA3001799 and IzarSet software
7	Flow data	<ul style="list-style-type: none"> qs = maximum approved flow qp = nominal flow qi = minimum approved flow
8	Flow sensor specifications	<ul style="list-style-type: none"> PS/PN: 16 = maximum static pressure 16 bar DN15 = DN size of flow sensor IP54 = protection class Θ q: 5...130°C = permissible medium temperature
9	General specifications	<ul style="list-style-type: none"> Class 2 = accuracy class E1 / M1 = electromagnetic and mechanical resistance class P.-Year 2012 = production year
10	Temperature sensor specifications	<ul style="list-style-type: none"> Θ: 1...180°C = permissible medium temperature ΔΘ: 3...177K = temperature difference measuring range Pt500: temperature sensor type
11	Push button	Press briefly to toggle through display screens, press longer than three seconds to switch into another display loop. More detailed info on displays is given in the setup and operating instructions
12	Type	<ul style="list-style-type: none"> Type 775 = generation, see above Seven digit number = internal part number
13	CE and approval mark	CE and MID approval number and approval mark
14	Origin	'Made in Germany' origin mark

Dimensions

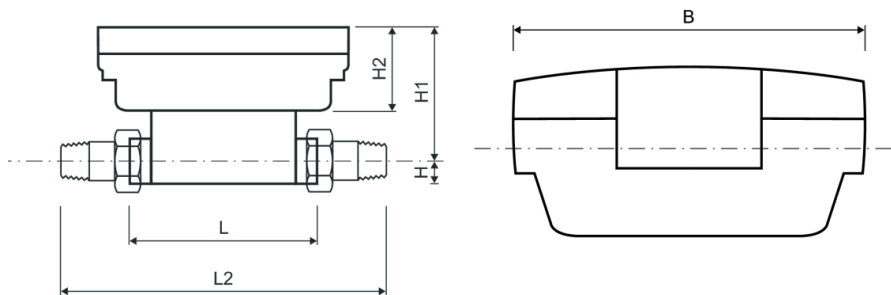


Fig. 10. Dimensions threaded versions

Table 3. Dimensions threaded versions

DN size	Length L	Length L2	Meter thread	Height H	Height H1	Height H2	Width B	Weight
15	110	190	G 3/4" B	14.5	82	54	100	0.8 kg
20	130	230	G 1" B	18	84	54	100	0.9 kg
25	260	380	G 1 1/4" B	23	88.5	54	100	1.5 kg
40	300	440	G 2" B	33	94	54	100	3.0 kg

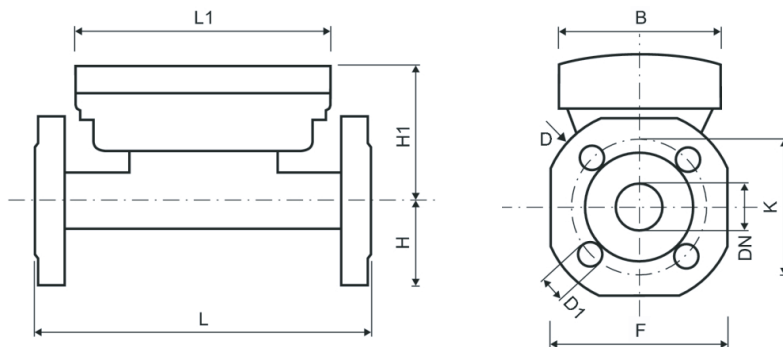


Fig. 11. Dimensions flanged version

Table 4. Dimensions flanged version

DN size	Length L	Height H	Height H1	Height H2	Width B	Flange Ø D	Flange size F	Bolt circle Ø K	Weight
32	260	62.5	88.5	54	100	139	125	100	4.8 kg
40	300	69	94	54	100	148	138	110	6.8 kg
50	270	73.5	99	54	100	163	147	125	7.6 kg
65	300	85	106.5	54	100	184	170	145	9.6 kg
80	300	92.5	114	54	100	200	185	160	11 kg
100	360	108	119	54	100	235	216	190	17 kg

NOTE: All dimensions in mm unless stated otherwise
 Length L2 is approximate and varies depending on type of fitting used.
 Weight is without fittings

ORDERING DETAILS

Ordering Information

Table 5. Standard Configurations

Item	DN size	Flowrate qp	Length	OS-No.:	
				for heating only	for heating and chilled water
EW773 Series with two free communication slots (no modules installed)					
Threaded connections	15	1.5 m ³ /h	110 mm	EW7730A1200	EW7731A1200
	20	1.5 m ³ /h	130 mm	EW7730A1400	
	20	2.5 m ³ /h	130 mm	EW7730A2000	EW7731A2000
	25	6.0 m ³ /h	260 mm	EW7730A3600	EW7731A3600
	40	10 m ³ /h	300 mm	EW7730A4600	EW7731A4600
Flanged connections	32	6.0 m ³ /h	260 mm	EW7730A4000	EW7731A4000
	40	10 m ³ /h	300 mm	EW7730A4800	EW7731A4800
	50	15 m ³ /h	270 mm	EW7730A5200	EW7731A5200
	65	25 m ³ /h	300 mm	EW7730A6000	EW7731A6000
	80	40 m ³ /h	300 mm	EW7730A7000	EW7731A7000
	100	60 m ³ /h	360 mm	EW7730A7800	EW7731A7800
EW773 Series with two free communication slots (no modules installed), temperature and flow sensor cables with length=5m (length=3m for EW7730A3625)					
Threaded connections	15	1.5 m ³ /h	110 mm	EW7730A1225	
	20	2.5 m ³ /h	130 mm	EW7730A2250	
	25	6.0 m ³ /h	260 mm	EW7730A3625	
Flanged connections	40	10 m ³ /h	300 mm	EW7730A4825	
	50	15 m ³ /h	270 mm	EW7730A5225	
EW773 Series with RF on board and one free communication slot					
Threaded connections	15	1.5 m ³ /h	110 mm	EW7730F1200	EW7731F1200
	20	2.5 m ³ /h	130 mm	EW7730F2000	EW7731F2000
EW773 Series with installed M-Bus module and one free communication slot					
Threaded connections	15	1.5 m ³ /h	110 mm	EW7730M1200	EW7731M1200
	20	2.5 m ³ /h	130 mm	EW7730M2000	EW7731M2000
	25	6.0 m ³ /h	260 mm	EW7730M3600	EW7731M3600
Flanged connections	32	6.0 m ³ /h	260 mm		EW7731M4000
	40	10 m ³ /h	300 mm		EW7731M4800
	50	15 m ³ /h	270 mm		EW7731M5200
	65	25 m ³ /h	300 mm		EW7731M6000
	80	40 m ³ /h	300 mm		EW7731M7000
	100	60 m ³ /h	360 mm		EW7731M7800
EW773 Series with installed M-Bus and pulse input modules (both communication slots occupied)					
Threaded connections	15	1.5 m ³ /h	110 mm	EW7730K1200	
	20	2.5 m ³ /h	130 mm	EW7730K2000	

Table 6. Special Configurations

Item	DN size	Flowrate qp	Length	OS-No.:	
				for heating only	for heating and chilled water
EW773 Series with installed M-Bus and pulse input modules, for installation in the supply					
Threaded connections	15	1.5 m³/h	110 mm	EW7730K1250	
	20	2.5 m³/h	130 mm	EW7730K2050	
	25	6.0 m³/h	260 mm	EW7730K3650	
EW773 Series with installed M-Bus and pulse input modules, for installation in the supply and with installed 230V mains power supply unit instead of A-cell battery					
Threaded connections	15	1.5 m³/h	110 mm	EW7730K1273	
EW773 Series with installed M-Bus and pulse output modules, for installation in the supply					
Threaded connections	15	1.5 m³/h	110 mm	EW7730L1250	
EW773 Series with installed M-Bus and pulse output modules, for installation in the supply and with installed 230V mains power supply unit instead of A-cell battery					
Threaded connections	15	1.5 m³/h	110 mm	EW7730L1273	
EW773 Series with installed M-Bus module and with installed 24V mains power unit instead of A-cell battery					
Threaded connections	15	1.5 m³/h	110 mm		EW7731M1224
	20	2.5 m³/h	130 mm		EW7731M2024
	25	6.0 m³/h	260 mm		EW7731M3624
Flanged connections	32	6.0 m³/h	260 mm		EW7731M4024
	40	10 m³/h	300 mm		EW7731M4824
	50	15 m³/h	270 mm		EW7731M5224
	65	25 m³/h	300 mm		EW7731M6024
	80	40 m³/h	300 mm		EW7731M7024
	100	60 m³/h	360 mm		EW7731M7824

Scope of Delivery

- EW773 Series ultrasonic meter consisting of energy calculator and flow sensor
- Cable for connection of energy calculator to flow sensor for sizes DN40 and larger. (Sizes below DN40 have a fixed factory fitted cable)
- Supply and return temperature sensors installed to energy calculator, length=2m (except for ...25 versions)
- One or two installation kits EWA3001303 for pipe installation of temperature sensors:
 - DN15...20: one kit included (one sensor is already installed in meter housing)
 - DN25...50: two kits included
 - DN65 and larger: no kits included as immersion pockets are to be used
- Wall mounting plate EWA3007090
- Two paper sealings
- Operating and setup instructions

Accessories

Unless stated otherwise accessories are sold in single packs. Table 7 below shows which connection set and ball valve can be used for which meter size. The meter size is given in the top line and refers to the eighth and ninth characters of the OS number. Example: Items listed in the column headed '12xx' can be used for all OS numbers with '12' as eighth and ninth character, e.g. 'EW7730A1200', 'EW7731M1200' or 'EW7730K1273' and so on.

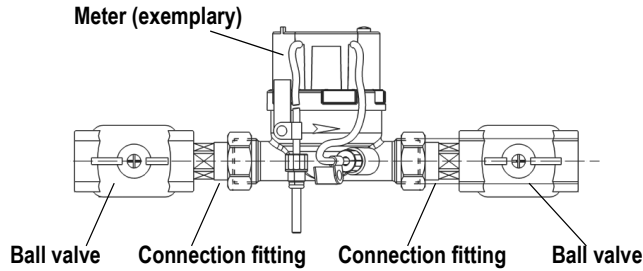


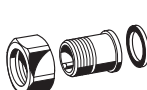
Fig. 12. Flow sensor installation

Table 7. Cross reference: connection sets and ballvalves/meter


EW773xX...	12xx	14xx, 20xx	36xx	46xx
DN size	DN15	DN20	DN25	DN40
Connection size	G 3/4"	G 1"	G 1 1/4"	G 2"
Connection fittings				
Connection set with externally threaded tailpiece	1 x EWA1500035	1 x EWA1500042	1 x EWA1500062	1 x EWA1500072
Connection set with internally threaded tailpiece	2 x VA7405A015	2 x VA7405A020	2 x VA7405A025	n.a.
Connection set with Sanpress crimp fitting	2 x VA7404A015	2 x VA7404A020	2 x VA7404A025	n.a.
Connection set with Mapress crimp fitting	2 x VA7403A015	2 x VA7403A020	2 x VA7403A025	n.a.
Ball valves				
Ball valve with additional port	EWA087HY003	EWA087HY004	EWA087HY005	n.a.

Connection Sets for Flow Sensor


Set of union nut, sealing and externally threaded brass tailpiece (one pack per meter required)

	For DN15, 1/2" x 3/4"	EWA1500035
	For DN20, 3/4" x 1"	EWA1500042
	For DN25, 1" x 1 1/4"	EWA1500062
	For DN40, 1 1/2" x 2"	EWA1500072

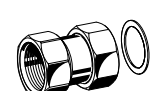
Set of union nut, sealing and Mapress stainless steel crimp fitting (two packs per meter required)

	For DN15, for 15mm pipe-Ø	VA7403A015
	For DN15, for 18mm pipe-Ø	VA7403A018
	For DN20, for 22mm pipe-Ø	VA7403A020
	For DN25, for 28mm pipe-Ø	VA7403A025

Set of union nut, sealing and Sanpress red bronze crimp fitting (two packs per meter required)

	For DN15, for 15mm pipe-Ø	VA7404A015
	For DN15, for 18mm pipe-Ø	VA7404A018
	For DN20, for 22mm pipe-Ø	VA7404A020
	For DN25, for 28mm pipe-Ø	VA7404A025

Set of union nut, sealing and internally threaded red bronze tailpiece (two packs per meter required)

	For DN15, thread Rp1/2"	VA7405A015
	For DN20, thread Rp3/4"	VA7405A020
	For DN25, thread Rp1"	VA7405A025

NOTE: Union nuts of connection sets EWA15000 are drilled for sealing with locking wire. Union nuts of connection sets VA7403, VA7404 and VA7405 are not sealable with locking wire

Temperature Sensors

Replacement Pt500 temperature sensors in pairs (one pack per meter required)



Ø 5.2 x 2,000mm	EWA3002680
Ø 5.2 x 3,000mm	EWA3002681
Ø 5.2 x 5,000mm	EWA3002682
Ø 5.2 x 10,000mm	EWA3002679

Connection Sets for Temperature Sensors

Temperature sensor installation kit (bulk pack of 20pcs)



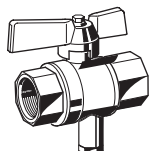
Brass, max. 130°C	EWA3001303
Plastic, max. 90°C	EWA3001305

Tailpiece for direct connection of temperature sensor to T-piece with 1/2" internal thread. Temperature sensor installation kit required



R1/2" external thread, M10x1 sensor thread	EWA087HY003
G1/4" external thread, M10x1 sensor thread	EWA354830

Ballvalve with direct connection for temperature sensor. Temperature sensor installation kit required



DN15, G1/2" internal thread	EWA087HY004
DN20, G 3/4" internal thread	EWA087HY005
DN25, G1" internal thread	EWA087HY006

Brass immersion pockets

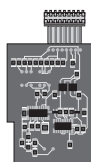


35mm, for DN25...32	EWA3002684
52mm, for DN40...65	EWA3002685
85mm, for DN80...100	EWA3004406

NOTE: Immersion pockets are mandatory for sizes DN65 and larger. They must be used for both temperature sensors, also when used with smaller sizes

Modules

Internal modules



M-Bus module	
Single pack	EWA3022071
Bulk pack of 72pcs	EWA3023125
Pulse output module	EWA3022073
Pulse input module	
Single pack	EWA3022074
Bulk pack of 72pcs	EWA3023130
Combined pulse in-/output	EWA3022075
RS232 interface module with cable	EWA3028129
RS485 interface module	EWA3022101
Analogue 4...20mA module	EWA3022106

External RF module



M-Bus, for all EW773 with M-Bus module	EWA9100AEZ001
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Other Accessories

Power supply



Replacement A-cell battery	EWA3022102
D-cell battery	EWA3022103
Mains supply unit 230V AC	EWA3022076
Mains supply unit 24V AC	EWA3022079
Replacement backup battery for mains supply units	EWA3022097

Calculator mounts



Wall mount	
Single pack	EWA3007090
Bulk pack of 72pcs	EWA3007091
Angle mount	EWA3026160
Distance mount	EWA54200011
DIN rail mount	EWA54200012

Meter parametrisation



Bluetooth optohead, for all EW773	EWA3001799
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IzarExpert dongle, for all EW773	EWP3021322
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Calibration certificates



For up to five meters	EWA3003095A
For six to 20 meters	EWA3003095B
For more than 20 meters	EWA3003095C

DIAGRAMS

Accuracy

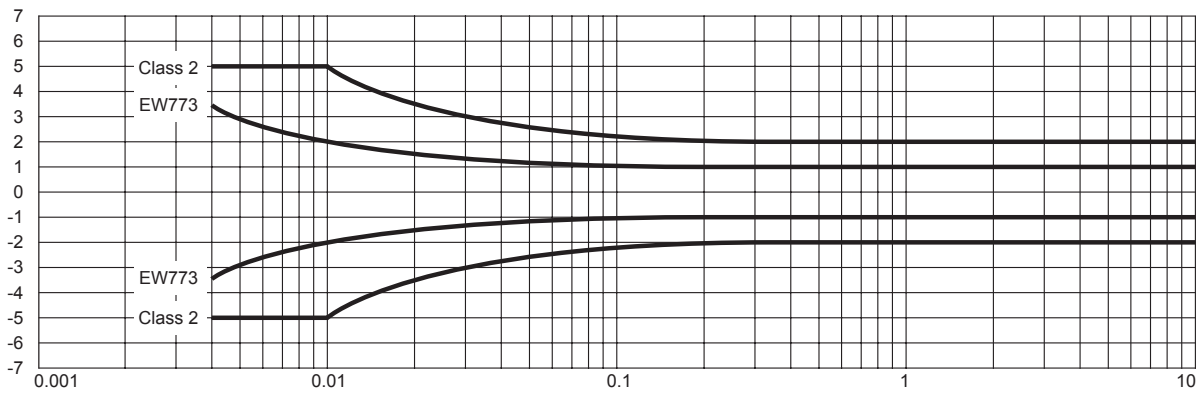


Fig. 13. Accuracy chart EW773 Series

Flow Diagram

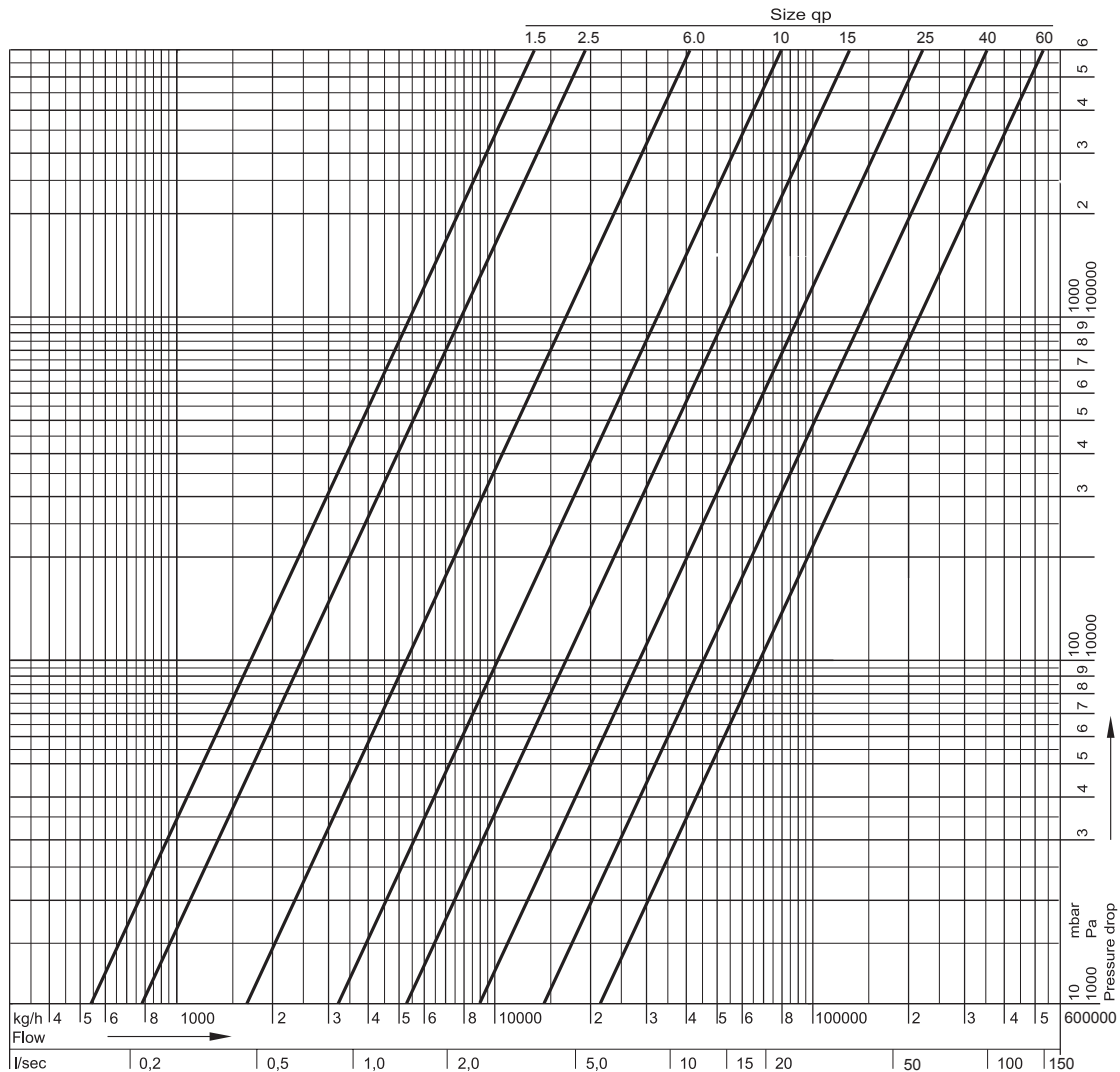


Fig. 14. Pressure drop diagram EW773 Series

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