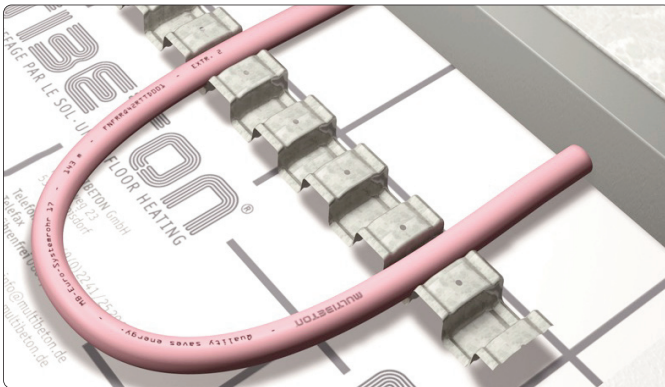


System pipes & system components The MULTIBETON classics	01
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MB Euro System pipe 12, 17 and 22

High-heat stabilised copolymer, MB raw material development, UV-stabilised, highly molecular, long-term and ageing-resistant, diffusion protection according to MULTIBETON process, specially packaged; fixed lengths can be produced by arrangement.

010001-100	MB-ER12	12.0 mm x 2.2 mm	100 m coil
010001-200	MB-ER12	12.0 mm x 2.2 mm	200 m coil
010001-300	MB-ER12	12.0 mm x 2.2 mm	300 m coil
010001-500	MB-ER12	12.0 mm x 2.2 mm	500 m coil
010011-200	MB-ER17	17.0 mm x 2.2 mm	200 m coil
010011-300	MB-ER17	17.0 mm x 2.2 mm	300 m coil
010011-500	MB-ER17	17.0 mm x 2.2 mm	500 m coil
010031-500	MB-ER22	22.0 mm x 2.4 mm	500 m coil

MB System pipe 17

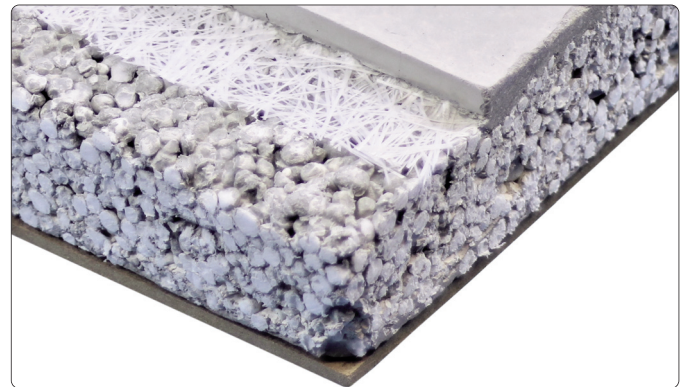
High-heat stabilised copolymer, MB raw material development, UV-stabilised, highly molecular, long-term and ageing-resistant, specially packaged; fixed lengths can be produced by arrangement.

010021-200	MB-SR17	17.0 mm x 2.2 mm	200 m coil
010021-300	MB-SR17	17.0 mm x 2.2 mm	300 m coil
010021-500	MB-SR17	17.0 mm x 2.2 mm	500 m coil

MB Steel clip rail

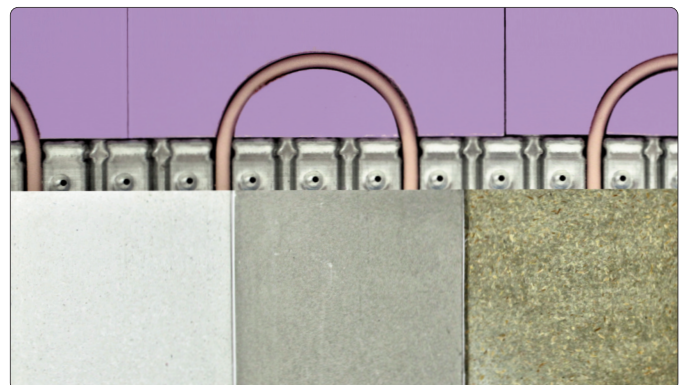
1 bundle = 15 rails of 2 m = 30 m, made of galvanized steel, manufacturing tolerance $\pm 0.8\%$, perforated for better wall and ceiling mounting

010041-30	MB-CS12		
	MB Steel clip rail 12		30 m bundle
010051-30	MB-CS17		
	MB Steel clip rail 17		30 m bundle



System components for MB Flat System (FLS-35/27)

080301	MB Lightweight screed (MB-LES)	1 bag = 21 kg
080302	MB Glass fibre mat (MB-GFM), custom length	m ²
080303	MB Thin screed (MB-DES)	1 bag = 25 kg
080304	MB Thin screed Pro (MB-DEP)	1 bag = 25 kg
080305-25	Edge insulation band FLS	
	50 mm (h) x 8 mm (w)	1 roll = 25 m
080307	Primer FLS	1 can = 10 kg
080308	Fabric tape FLS	
	Width 50 mm	1 roll = 50 m
080309	Adhesive sealing tape FLS	
	Width 60 mm	1 roll = 25 m



System components for MB Dry Floor (TRB-17)

Attention: These products may have longer delivery times.

080201	MB Load distribution plate (MB-DVP) for TRB-17	m ²
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MB Screed emulsion standard (MB-Typ E)

Highly efficient standard screed emulsion: Improvement in workability, flexural strength, compressive strength, adhesion, surface smoothness, rapid drying and temperature distribution of screeds for underfloor heating and cooling. Special properties: MB-Typ E results in unusually high water savings with the various dosages. The small addition of water is even the prerequisite for the quality improvements listed.

020001-20 MB-Typ E can of 20 l

MB Screed emulsion special (MB-PVP)

Special screed emulsion: The targeted addition of plastic to the screed mortar improves the finished screed in terms of compaction, flexural strength, compressive strength, adhesion, surface smoothness, quick drying, temperature distribution of underfloor heating and cooling systems, in the abrasion resistance and in the static values. Use as an additive for cement-based fillers, to strengthen cement screeds, as a smooth cement screed, for screed repairs, with normal cement screed and panel mortar, for binders, for flat screeds for MULTIBETON surface heating and for cement-based rapid screeds.

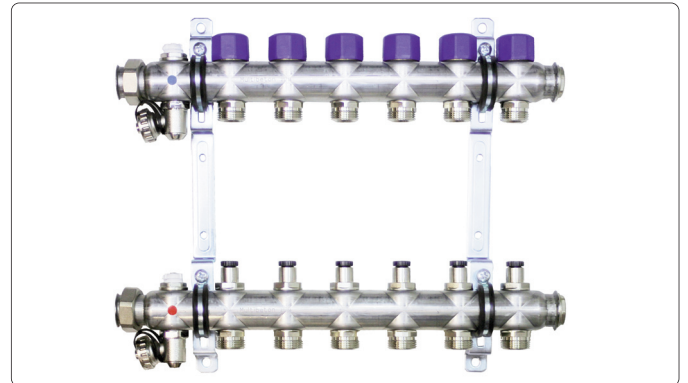
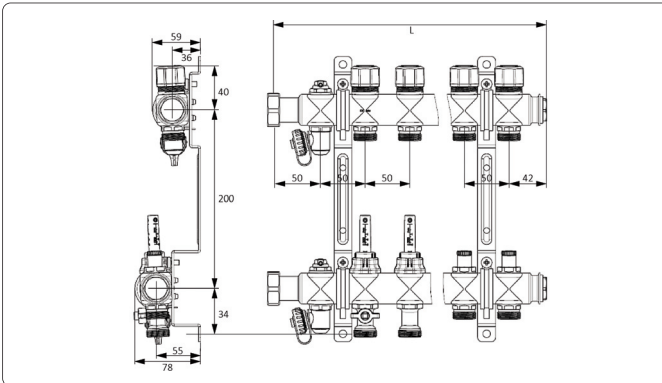
020011-10 MB-PVP can of 10 l

020011-20 MB-PVP can of 20 l

Steel fibres

For screed reinforcement of the MB Flat Screed System (EFS-40): Length 20mm, width 1.7mm, thickness 0.5mm (KrampeHarex Typ KE 20/1.7 with hooked ends)

020051-20 Steel fibres box of 20 kg



Manifold 1" standard

Manifold 1" standard with regulating inserts (meets the DIN 1264-4) for manual hydraulic balancing of the heating circuits, especially low-resistance and recommended for all MB System pipes. Manifold with flow and return bars made of stainless steel (DN 32) according to EN 10088-2, completely pre-assembled, 2 x manual vent valve 1/2", 2 x service valve (flush, fill and drain valve) 1/2", 2 x end plugs 3/4" (all parts nickel-plated).

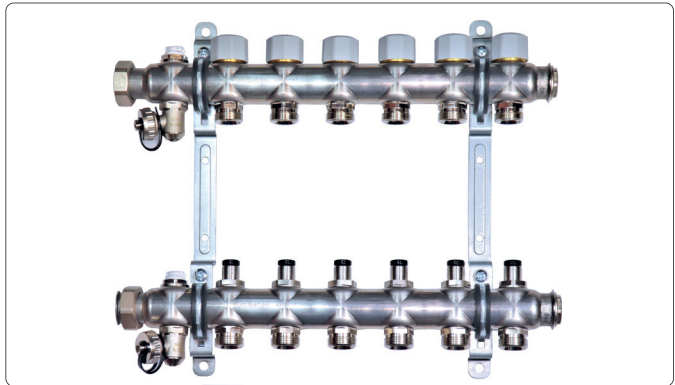
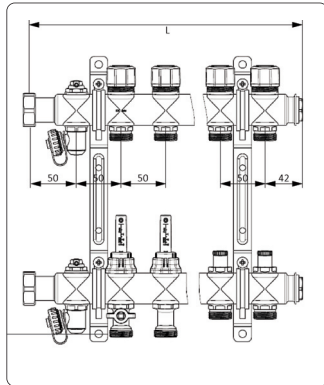
Outlets: nickel-plated connection nipple 3/4" ET with Euro cone according to DIN V 3838 suitable for connection fittings, spigot distance 50 mm, 2 x union nut 1" IT (nickel-plated) flat-sealing for direct connection of the ball valves;

Return bar: integrated thermostatic valve (constant volume flow = 2.75 m³/h, V2A) with blue manual regulation caps and connection thread M30 x 1.5 (prepared for on-site installation of electrothermal actuators);

Flow bar: integrated regulating inserts with memory function (constant volume flow = 2.88 m³/h, nickel-plated, stroke regulation can be preset) for regulating and shutting off the water flow;

Miscellaneous: room labels, 2 x galvanized double wall brackets (200 mm distance between flow and return beams) with sound insulation insert (DIN 4109), complete with screws and dowels, packed in a protective cardboard box;

030001-2	02 circuits	length (L) 192 mm
030001-3	03 circuits	length (L) 242 mm
030001-4	04 circuits	length (L) 292 mm
030001-5	05 circuits	length (L) 342 mm
030001-6	06 circuits	length (L) 392 mm
030001-7	07 circuits	length (L) 442 mm
030001-8	08 circuits	length (L) 492 mm
030001-9	09 circuits	length (L) 542 mm
030001-10	10 circuits	length (L) 592 mm
030001-11	11 circuits	length (L) 642 mm
030001-12	12 circuits	length (L) 692 mm



Manifolds 1" flow indicator

Manifolds 1" flow indicator (meets the DIN 1264-4) for manual hydraulic balancing of the heating circuits, especially low-resistance and recommended for all MB System pipes. Manifold with flow and return bars made of stainless steel (DN 32) according to EN 10088-2, completely pre-assembled, 2 x manual vent valve 1/2", 2 x service valve (flush, fill and drain valve) 1/2", 2 x end plugs 3/4" (all parts nickel-plated).

Outlets: nickel-plated connection nipple 3/4" ET with Euro cone according to DIN V 3838 suitable for connection fittings, spigot distance 50 mm, 2 x union nut 1" IT (nickel-plated) flat-sealing for direct connection of the ball valves;

Return bar: integrated thermostatic valve (constant volume flow = 2.75 m³/h, V2A) with blue manual regulation caps and connection thread M30 x 1.5 (prepared for on-site installation of electrothermal actuators);

Flow bar: with integrated flow indicator 0-3 l/min with memory function (constant volume flow = 1.23 m³/h, V2A) for regulating and shutting off the water flow;

Miscellaneous: room labels, 2 x galvanized double wall brackets (200 mm distance between flow and return beams) with sound insulation insert (DIN 4109), complete with screws and dowels, packed in a protective cardboard box;

030011-2	02 circuits	length (L) 192 mm
030011-3	03 circuits	length (L) 242 mm
030011-4	04 circuits	length (L) 292 mm
030011-5	05 circuits	length (L) 342 mm
030011-6	06 circuits	length (L) 392 mm
030011-7	07 circuits	length (L) 442 mm
030011-8	08 circuits	length (L) 492 mm
030011-9	09 circuits	length (L) 542 mm
030011-10	10 circuits	length (L) 592 mm
030011-11	11 circuits	length (L) 642 mm
030011-12	12 circuits	length (L) 692 mm

Manifolds 1" constant flow regulators

Manifolds 1" constant flow regulators for automatic hydraulic balancing of the heating circuits, especially low-resistance and recommended for all MB System pipes. Manifold with flow and return bars made of stainless steel (DN 32) according to EN 10088-2, completely pre-assembled, 2 x manual vent valve 1/2", 2 x service valve (flush, fill and drain valve) 1/2", 2 x end plugs 3/4" (all parts nickel-plated).

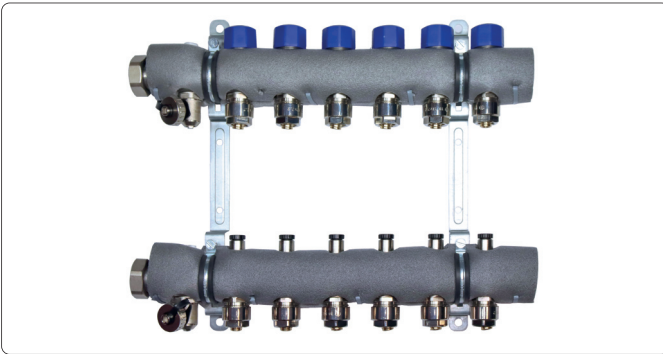
Outlets: nickel-plated connection nipple 3/4" ET with Euro cone according to DIN V 3838 suitable for connection fittings, spigot distance 50 mm, 2 x union nut 1" IT (nickel-plated) flat-sealing for direct connection of the ball valves;

Return bar: integrated constant flow regulators 0-5 l/min in the thermostatic inserts with gray manual control caps and connection thread M30 x 1.5 (prepared for on-site installation of electrothermal actuators);

Flow bar: integrated regulating inserts (constant volume flow = 2.88 m³/h, nickel-plated) for shutting off the water flow;

Miscellaneous: room labels, 2 x galvanized double wall brackets (200 mm distance between flow and return beams) with sound insulation insert (DIN 4109), complete with screws and dowels, packed in a protective cardboard box;

030022-2	02 circuits	length (L) 192 mm
030022-3	03 circuits	length (L) 242 mm
030022-4	04 circuits	length (L) 292 mm
030022-5	05 circuits	length (L) 342 mm
030022-6	06 circuits	length (L) 392 mm
030022-7	07 circuits	length (L) 442 mm
030022-8	08 circuits	length (L) 492 mm
030022-9	09 circuits	length (L) 542 mm
030022-10	10 circuits	length (L) 592 mm
030022-11	11 circuits	length (L) 642 mm
030022-12	12 circuits	length (L) 692 mm



Multinox standard MB-ER17

consisting of manifold 1" (030001-2 to 030001-12) incl. insulation set (040021-2 to 040021-12) and connection fittings (050002).

090371-2	02 circuits	length (L) 192 mm
090371-3	03 circuits	length (L) 242 mm
090371-4	04 circuits	length (L) 292 mm
090371-5	05 circuits	length (L) 342 mm
090371-6	06 circuits	length (L) 392 mm
090371-7	07 circuits	length (L) 442 mm
090371-8	08 circuits	length (L) 492 mm
090371-9	09 circuits	length (L) 542 mm
090371-10	10 circuits	length (L) 592 mm
090371-11	11 circuits	length (L) 642 mm
090371-12	12 circuits	length (L) 692 mm

Multinox standard MB-ER12

incl. connection fittings (050001), otherwise as 090371-2 to 090371-12; art. no. 090361-2 to 090361-12

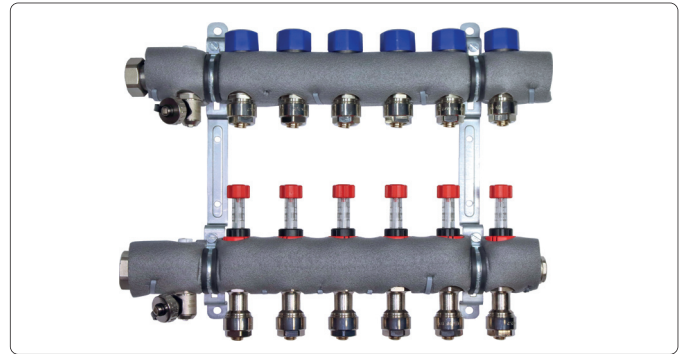
Multinox standard MB-ER22

without connection fittings but incl. clamping joints ET (050033) and connection set (050112-1), otherwise as 090371-2 to 090371-12; art. no. 090374-2 to 090374-12

Multinox constant flow regulators MB-ER17

consisting of manifold 1" (030021-2 to 030021-12) incl. insulation set (040021-2 to 040021-12) and connection fittings (050002).

090373-2	02 circuits	length (L) 192 mm
090373-3	03 circuits	length (L) 242 mm
090373-4	04 circuits	length (L) 292 mm
090373-5	05 circuits	length (L) 342 mm
090373-6	06 circuits	length (L) 392 mm
090373-7	07 circuits	length (L) 442 mm
090373-8	08 circuits	length (L) 492 mm
090373-9	09 circuits	length (L) 542 mm
090373-10	10 circuits	length (L) 592 mm
090373-11	11 circuitse	length (L) 642 mm
090373-12	12 circuits	length (L) 692 mm



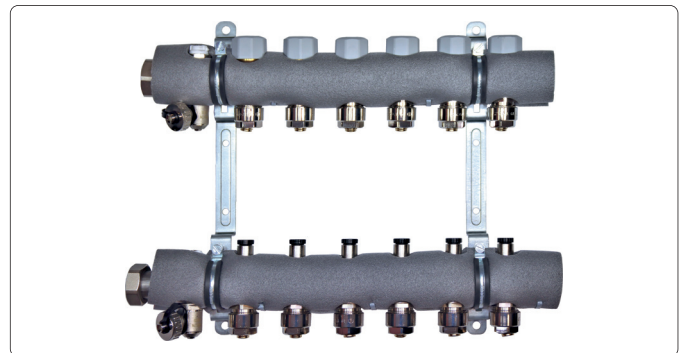
Multinox flow indicators MB-ER17

consisting of manifold 1" (030011-2 to 030011-12) incl. insulation set (040021-2 to 040021-12) and connection fittings (050002).

090372-2	02 circuits	length (L) 192 mm
090372-3	03 circuits	length (L) 242 mm
090372-4	04 circuits	length (L) 292 mm
090372-5	05 circuits	length (L) 342 mm
090372-6	06 circuits	length (L) 392 mm
090372-7	07 circuits	length (L) 442 mm
090372-8	08 circuits	length (L) 492 mm
090372-9	09 circuits	length (L) 542 mm
090372-10	10 circuits	length (L) 592 mm
090372-11	11 circuits	length (L) 642 mm
090372-12	12 circuits	length (L) 692 mm

Multinox flow indicators MB-ER12

incl. connection fittings (050001), otherwise as 090372-2 to 090372-12; art. no. 090362-2 to 090362-12



Multinox constant flow regulators MB-ER12

incl. connection fittings (050001), otherwise as 090373-2 to 090373-12; art. no. 090363-2 to 090363-12



In-wall cabinet for manifold 1"

The built-in frame is made of hot-dip galvanised sheet steel. The cabinet feet are height-adjustable (180 mm). The screed baffle plate is removable and adjustable. The pipe deflection rail is removable. The front panel with four insertion latches is removable and adjustable (110 – 150 mm) and is completely galvanised and painted pure white (RAL 9016). The plug-in door with turning bolt is integrated in the front panel. Completely packed in a protective box, the fronts are additionally packed. Adjustable support rails for manifold bars are available. Locks are optionally available.

060001-1	size 1	489 x (712-892) x (111-150) mm
060001-2	size 2	724 x (712-892) x (111-150) mm
060001-3	size 3	1024 x (712-892) x (111-150) mm
060001-4	size 4	1474 x (712-892) x (111-150) mm

060701-1	Door and frame lacquered for 060001-1
060701-2	Door and frame lacquered for 060001-2
060701-3	Door and frame lacquered for 060001-3
060701-4	Door and frame lacquered for 060001-4

060711-1	Screed baffle plate lacquered for 060001-1
060711-2	Screed baffle plate lacquered for 060001-2
060711-3	Screed baffle plate lacquered for 060001-3
060711-4	Screed baffle plate lacquered for 060001-4



On-wall cabinet for manifold 1"

The On-wall cabinet is made of galvanised sheet steel and painted pure white (RAL 9016). The cabinet feet are height-adjustable (180 mm), the screed baffle plate is removable. Plug-in door with plastic turning bolt, locks are optionally available. The On-wall cabinet is completely packed in a protective box. Adjustable support rails for distributor bars are available.

060011-A	size A	496 x (622-802) x 125 mm
060011-B	size B	731 x (622-802) x 125 mm
060011-C	size C	1031 x (622-802) x 125 mm
060011-D	size D	1481 x (622-802) x 125 mm

060741	Cylinder lock with key, for all cabinets
060742	Insertion latches for all In-wall cabinets

060721-1	Screed baffle plate zinc-plated for 060001-1
060721-2	Screed baffle plate zinc-plated for 060001-2
060721-3	Screed baffle plate zinc-plated for 060001-3
060721-4	Screed baffle plate zinc-plated for 060001-4

Cabinet selection	Cabinet 1" Standard, Flow indicator, Constant flow regulator	Cabinet 1" with calorimeter installation set vertical	Cabinet 1" with calorimeter installation set horizontal	Cabinet 1" Fixed value control set 1"	Cabinet 1" Fixed value control set 1" with calorimeter installation set vertical and 2 fittings	Cabinet 1" Fixed value control set 1" with calorimeter installation set horizontal and 2 fittings
02 circuits	1/A	1/A	2/B	2/B	2/B	3/C
03 circuits	1/A	1/A	2/B	2/B	2/B	3/C
04 circuits	1/A	1/A	2/B	2/B	2/B	3/C
05 circuits	2/B	2/B	2/B	3/C	3/C	4/D
06 circuits	2/B	2/B	3/C	3/C	3/C	4/D
07 circuits	2/B	2/B	3/C	3/C	3/C	4/D
08 circuits	2/B	2/B	3/C	3/C	3/C	4/D
09 circuits	2/B	2/B	3/C	3/C	4/D	4/D
10 circuits	3/C	3/C	3/C	3/C	4/D	4/D
11 circuits	3/C	3/C	3/C	4/D	4/D	4/D
12 circuits	3/C	3/C	4/D	4/D	4/D	4/D
13 circuits	3/C	3/C	4/D	4/D	4/D	4/D
14 circuits	4/D	4/D	4/D	4/D	4/D	-



Symondo Sensor (room thermostat)
This digital individual room thermostat controls and measures

- the temperature for heating and cooling,
- the humidity,
- the air quality,
- the CO₂ value and it is
- WiFi enabled.

The Symondo sensor is equipped with a built-in multi-sensor and digital communication via 1-wire bus or with an integrated WLAN module. Intuitive operation via integrated touch surfaces and LEDs, which are discreetly integrated into the plastic panel in standby mode. Constant monitoring of the air quality via colored status LEDs. Versatile installation options for flush mounting in standard switch frames or as a surface-mounted version.

- 070063** **Symondo Sensor** (wired)
- 070064** **Symondo Sensor WLAN** (wireless)



Symondo Controller (Symondo Box Control)
Elegant controller for controlling the Symondo Box with a capacitive TFT touch panel, optionally with an integrated WLAN module and a suitable smartphone app for convenient remote control and optimisation of the heating system.

- 070062** **Symondo Controller** (wired)
- 070061** **Symondo Controller WLAN** (wired)



Symondo Box (strip terminal)
This strip terminal for heating and cooling works in conjunction with at least one Symondo Controller.

- Convenient commissioning, system configuration and system maintenance by touch via the Symondo Controller or via the martdevice app;
- Switchover from heating to cooling mode and permanent dew point monitoring based on the relative humidity in the room;
- The Symondo Box controls up to 8 Symondo Sensors and 32 actuators.
- Symondo is modularly expandable to network several Symondo boxes;
- Selectable functions for free outputs: weather-compensated heating circuit, boiler contact, etc.;

070060 **Symondo Box**

Power supply		230 VAC
Internal operating voltage		24 VDC, 5 VDC, 3.3 VDC
Relay outputs 230 VAC (NO contact)		9
Relay outputs potential-free with changeover contact		2
0 - 10 V or PWM outputs		3
24 VDC voltage output for external devices		max. 12 W
LED for operating states		14
Temperature sensor inputs	*01	up to 20
Compatible room thermostats	*02	up to 8 Symondo Sensors
Digital interface	*03	2 x CAN & 1-Wire
Heating pump	*04	230 VAC on/off/PWM
Heating mixer	*05	0 - 10 V or PWM
Heating zones and actuators	*06	8 x 4
Heat request	*07	yes
Fan coil function via 0 -10 V/PWM		yes
Heating/cooling switch	*07	yes
Cooling request	*07	yes
Dehumidifier	*08	yes
Heating operating times per day	*09	8 per zone
Comfort function for fast heating	*09	for each zone
Energy-saving heating mode Eco Eco	*09	for each zone
Cooling operating times per day	*09	8 per zone
Comfort function for fast cooling	*09	for each zone
Energy-saving cooling mode Eco	*09	for each zone
Dew point calculation	*10	yes
PID control for constant room temperature		yes

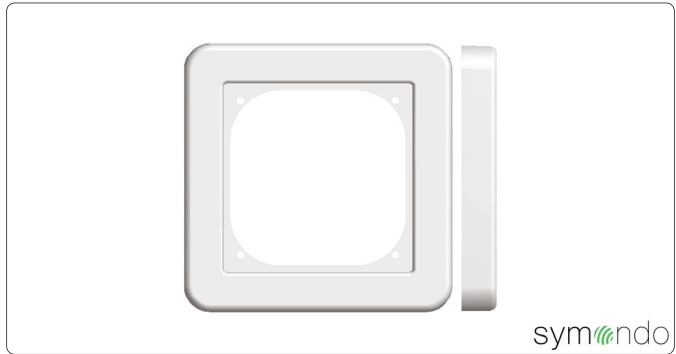
*01 By 1-wire bus up to 20 sensors, additional temperature sensors by CAN network or WLAN;
 *02 Up to 8 Symondo Sensors can be supplied by the Symondo Box with 5 V DC operating voltage from the 1-Wire bus.
 *03 Two separate CAN networks, 1 x private (apartment), 1 x heating system (building);
 *04 Via 230 VAC relays on/off, or speed-controlled via PWM;
 *05 Flow temperature control is done according to room temperature, optionally weather-compensated or combination of weather-compensation with room temperature influence;
 *06 Up to 8 heating zones with up to 4 x 230 VAC actuators as NO or NC design also with PID control;
 *07 Potential-free relay contact, 0 - 10 V or PWM signal or via CAN network;
 *08 Free assignable function on one of the relay or V outputs;
 *09 Adjustable via Symondo Controller;
 *10 Via Symondo Controller/Sensor in each zone where it is installed separately.



Symondo Sensor On-Wall

Mounting set consisting of a single frame (10 mm) and a surface frame (40 mm total height) for 55 mm insert; Provides sufficient space for Symondo Sensors. Pure white (RAL9003) plastic surface mount frame, 80mm x 80mm, matte eroded finish with UV protection.

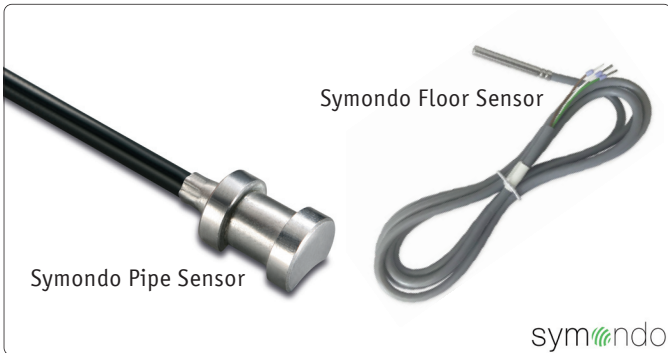
070070 Symondo Sensor On-Wall



Symondo Sensor Frame

Single frame for 55 mm insert for Symondo Sensor, 80 mm x 80 mm matt eroded finish (pure white, RAL9003) with UV protection.

070071 Symondo Sensor Frame



Symondo Pipe Sensor

For use on the 1-wire bus of the Symondo Box as a pipe contact sensor;

070072 Symondo Pipe Sensor

Symondo Floor Sensor

For use on the 1-Wire bus of the Symondo Box as a floor sensor;

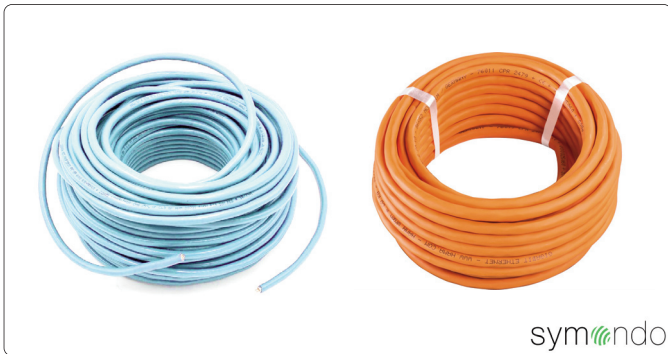
070073 Symondo Floor Sensor



Symondo Outside Sensor

For use on the 1-Wire bus of the Symondo Box as an outside sensor;

070074 Symondo Outside Sensor



Symondo Controller Cable

Shielded twisted pair CAN connection cable (6-core) as a 100 m roll, 3 x 2 x 0.22 mm²;

070075 Symondo Controller Cable

Symondo Sensor Cable

Shielded twisted pair 1-wire connection cable as a 100 m roll, 2 x 2 x 0.75 mm²;

070076 Symondo Sensor Cable


Actuator Basic

Currentless closed, M30 x 1.5, ready to plug in, noiseless, can be mounted upside down, rotary knob for manual operation at any time;

- 070001 Actuator Basic**
230 V, 50/60 Hz,
- 070002 Actuator Basic**
24 V, 0-60 Hz

Protection class	IP54
Stellweg	4.5 mm
Actuating force	100 N
Media temp.	max. 100 °C,
Ambient temp.	max. 60 °C
Surge	min. 2,500 V
	nach EN 60730-1
Width	39 mm
Operating output	1.2 W
Connection cable 2 x 0.75 mm ²	
	acc. EN 60730
	length 0.8 m


Strip terminal Basic

For wiring the actuators, up to 6 or 10 room controllers and 15 or 21 actuators can be connected.

- 070011 Strip terminal Basic 230/24 V** up to 6 zones only for heating
- 070011-1 Strip terminal Basic 230/24 V** up to 10 zones only for heating
- 070012 Strip terminal Basic H/K** with pump logic up to 6 zones for heating and cooling
- 070012-1 Strip terminal Basic H/K** with pump logic up to 10 zones for heating and cooling


Thermostat Basic On-wall

Room thermostat (RAL 9010) with setting wheel, on-wall version, power supply 230 V, 230 V output, temperature range 5-30 °C, frost protection function, can be limited and blocked, no connection option for floor sensor.

- 070021 Thermostat Basic On-wall**

Thermostat Basic In-wall

Room thermostat (RAL 9010) with setting wheel, in-wall version, power supply 230 V, 230 V output, temperature range 5-30 °C, frost protection function, can be limited and blocked. Can be used for the switch series from the manufacturers Busch-Jaeger, Berker, Jung, GIRA, Merten, Legrand, Peha and Hager.

- 070023 Thermostat Basic In-wall**


Thermostat Basic On-wall LED

Room thermostat (RAL 9010) in a programmable version with LED display, on-wall version, power supply 230 V, 230 V output, temperature range 5-35 °C, frost protection function, actual temperature display, limitable, anti-blocking function of the valve spindle, PWM control, seven pre-programmed schedules, heating/cooling function, floor sensor connection option.

- 070022 Thermostat Basic On-wall**

Thermostat Basic In-wall LED

Room thermostat (RAL 9010) in a programmable version with LED display, in-wall version, power supply 230 V, 230 V output, temperature range 5-35 °C, frost protection function, actual temperature display, limitable, anti-blocking function of the valve spindle, PWM control, seven pre-programmed schedules, heating/cooling function, floor sensor connection option.

- 070024 Thermostat Basic In-wall LED**



Due point sensor Basic

For integration into an existing NC/NO system, supply voltage 24 V. For switching off if there is a risk of condensation during the cooling application.

070707 Due point sensor Basic



RTB

The return temperature limiter keeps the room temperature constant at $\pm 0.5 \text{ }^\circ\text{C}$ (installation dimensions: length 65 mm, depth 65 – 75 mm), $\frac{3}{4}$ " x $\frac{3}{4}$ " ET, for installation in the return; Use of applicable standards and laws;

050111 RTB



Extension for stainless steel manifold 1"

Flow and return components for extending manifolds 1" with additional heating circuits; installation length 80 mm, incl. O-ring seal for manifold end plugs;

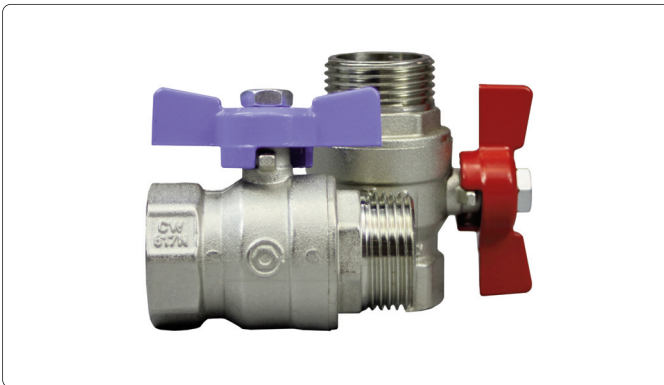
- 040001 ● **Extension thermostatic valve**
(KVS-value = 2,75 m³/h), prepared for on-site installation of electrothermal actuators
- 040002 ● **Extension regulation insert**
(KVS-value = 2,88 m³/h)
- 040003 ● **Extension flow indicator**
0-3 l/min (KVS-value = 1,12 m³/h)
- 040005 ● **Extension constant flow regulator**
0-5 l/min, prepared for on-site installation of electrothermal actuators



Insulation set 1"

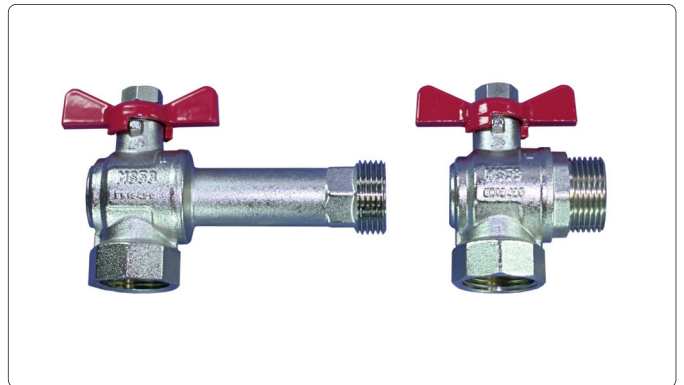
For insulating the manifold 1" when heating and cooling, easy to slip over, even when retrofitting, sufficient clips for fastening, screws (M6 x 25) for better connection of the clamps to the wall bracket of the manifold.

- | | | | |
|----------|------------|-----------|-------------|
| 040021-2 | 2 circuits | 040021-8 | 8 circuits |
| 040021-3 | 3 circuits | 040021-9 | 9 circuits |
| 040021-4 | 4 circuits | 040021-10 | 10 circuits |
| 040021-5 | 5 circuits | 040021-11 | 11 circuits |
| 040021-6 | 6 circuits | 040021-12 | 12 circuits |
| 040021-7 | 7 circuits | | |



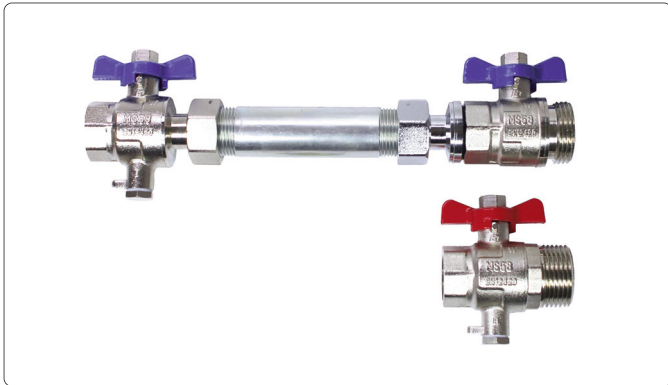
Ball valve set 1"

- 040033 **Two ball valves 1"**, red and blue, flat sealing, length without thread 56 mm, length with thread 72 mm, incl. flat seal 1"



Corner ball valve set 1"

- 040032 **Corner ball valve set 1"** incl. seal, red



Calorimeter installation set horizontal

The flow section contains 1 x ball valve 3/4" IT x 1" ET with immersion sensor connection IT. The installation section, 110 mm long, up to $Q_n = 2.5 \text{ m}^3/\text{h}$, is located in the return and contains 1 x ball valve 1" ET x 3/4" union screw connection and 1 x ball valve 3/4" IT x 3/4" union screw connection with immersion sensor connection IT. The immersion sensor connections in flow and return are suitable for immersion sensors DS (DIN EN 1434-2) ET M10x1 for measuring the flow and return temperature. The connections for flow and return lines are 3/4" IT.

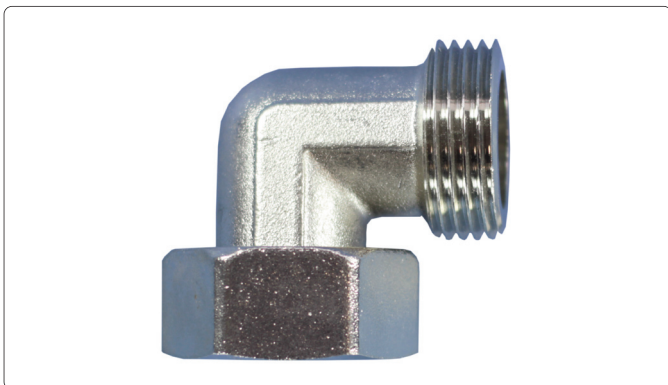
040051 Calorimeter installation set horizontal



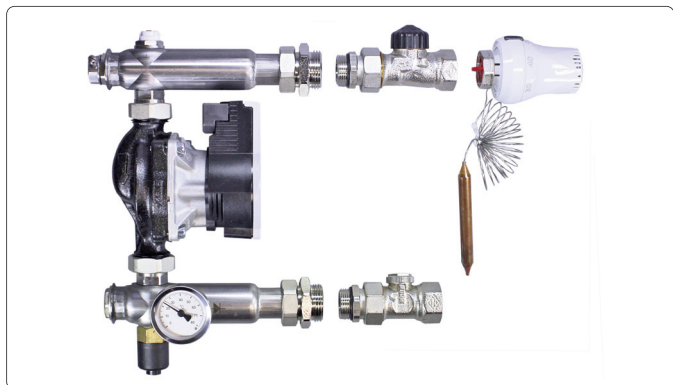
Calorimeter installation set vertical

The flow section contains 1 x 90° bend 3/4" ET x 1" ET such as 1 x ball valve 3/4" IT x 3/4" ET union screw connection with immersion sensor connection IT. The installation section, 110 mm long, up to $Q_n = 2.5 \text{ m}^3/\text{h}$, is located in the return and contains 1 x corner ball valve 1" ET x 3/4" union screw connection and 1 x ball valve 3/4" IT x 3/4" union screw connection with immersion sensor connection IT. The immersion sensor connections in flow and return are suitable for immersion sensors DS (DIN EN 1434-2) ET M10x1 for measuring the flow and return temperature. The connections for flow and return lines are 3/4" IT.

040052 Calorimeter installation set vertical



Connection elbow 90°
040081 1" ET x 1" union screw connection, flat sealing

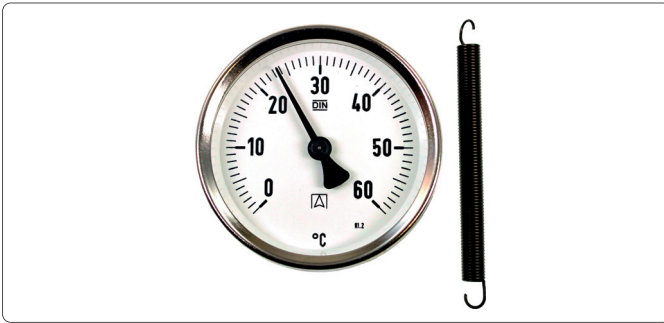


Fixed value control set
For underfloor heating, for connection to systems with higher flow temperatures, e.g. radiators, for reducing the flow temperature on the primary side, incl. pump Wilo-Para 15-130/4-20/SC. MULTIBETON recommends using the strip terminal H/K with pump logic.

040071-4 Fixed value control set



Screw connection
When using fixed value control set 1" and calorimeter installation set
040082 3/4" ET x 1" IT



Strap-on thermometer
040706 Strap-on thermometer 0 - 60 °C



Thermostatic valve insert E (for stainless steel manifold 1")
040707 Thermostatic valve insert E to install actuators



Regulation insert (for stainless steel manifold 1")
040708 Regulation insert



Connection nipple 3/4" short (for stainless steel manifold 1")
040709 Connection nipple 3/4" short with Eurocone for thermostatic valve insert and regulation insert



Flow indicator (for stainless steel manifold 1")
040701 Flow indicator 0 - 5 l
040703 Flow indicator 0 - 3 l



Connection nipple 3/4" long (for stainless steel manifold 1")
040704 Connection nipple 3/4" long with Eurocone for flow indicator



Red cap
040710 Red cap for flow indicator



Service valve (for stainless steel manifold 1")
040711 Service valve for rinsing, filling, and draining the manifold



Adjustment wrench

040705 Tool for setting the flow rate with flow indicator 0 - 3 l



Adapter for actuator M (for brass manifold)

040714 VA 04 M 30 x 1 for manifold 1"

040716 VA 10 M 30 x 1.5 for manifold 5/4"



Thermostatic valve insert M (for brass manifold 1")

040713 Thermostatic valve insert 3/8" ET for actuator M 30 x 1"



Actuator M (for brass manifold)

040717 Actuator 230 V without adapter

040718 Actuator 24 V without adapter



Thermostatic valve insert M (for brass manifold 5/4")

040715 Thermostatic valve insert 1/2" ET for actuator M 30 x 1,5"



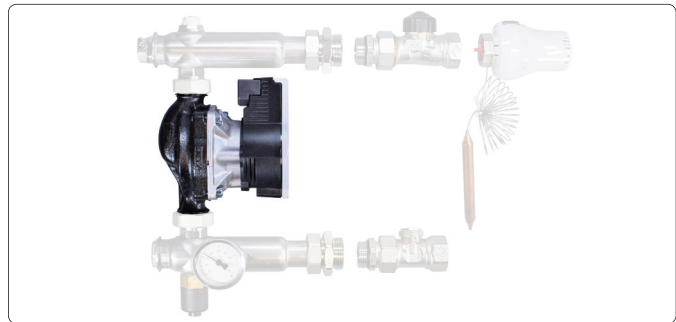
Thermostatic head with sensor

040720 for fixed value control set 1", control range 20 - 50 °C



Safety temperature switch

040719 for fixed value control set 1", shutdown temperature 55 °C



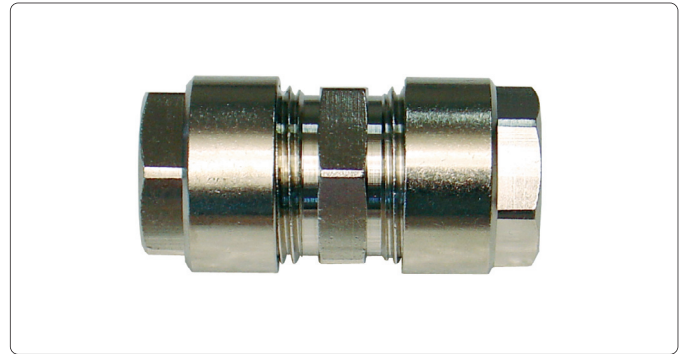
Pump Wilo Para 15-130/4

040712 for fixed value control set 1", with pump plug and cable



Connection fitting (for stainless steel manifold 1")

- 050001 3/4" IT for 12.0 mm x 2.2 mm
050002 3/4" IT for 17.0 mm x 2.2 mm



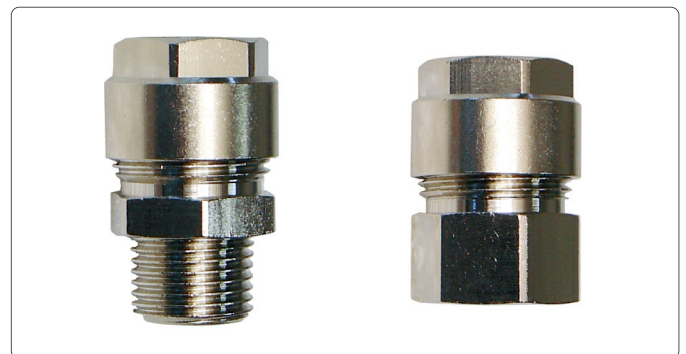
Coupling

- 050011 12.0 mm x 2.2 mm
050012 17.0 mm x 2.2 mm



Angle coupling

- 050021 12.0 mm x 2.2 mm
050022 17.0 mm x 2.2 mm

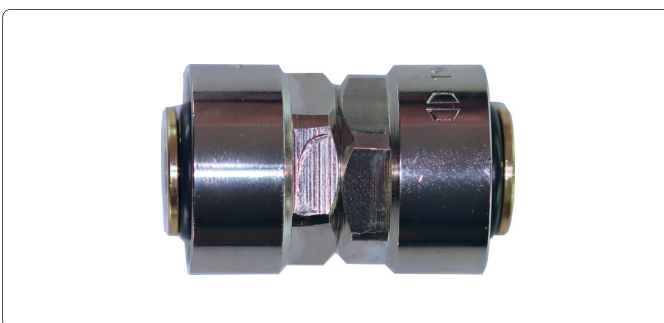


Clamping joint ET

- 050031 1/2" ET for 12.0 mm x 2.2 mm
050032 1/2" ET for 17.0 mm x 2.2 mm
050033 3/4" ET for 22.0 mm x 2.4 mm

Clamping joint IT

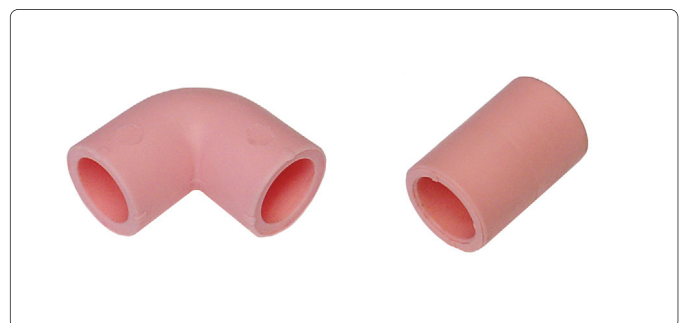
- 050041 1/2" IT for 12.0 mm x 2.2 mm
050042 1/2" IT for 17.0 mm x 2.2 mm



Connection set

For connecting the RTB to the heating circuit manifold and for connecting the MB-ER22 to the manifold in conjunction with an screw connection ET 22.0 mm x 2.4 mm

- 050112-1 **Connection set 3/4" IT x 3/4" IT, length 30 mm**



MB Welding sleeve

Only to extend the MB-SR17

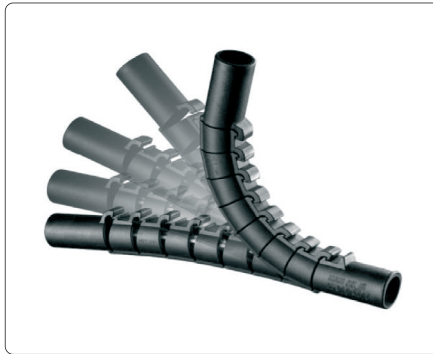
- 050101 **MB Welding sleeve 17** 10 pc./bag
050102 **MB Welding bend 17** 10 pc./bag



Pipe support fixed

Fixing of the MB system pipes at a fixed angle of 90°, e.g. in the manifold cabinet or for wall and ceiling ducts, no sharp edges or burrs, excellent sound insulation properties, highly heat-resistant, extremely stable nylon

080001 Pipe support fixed



Pipe support vario

Fixation of the MB system pipes up to 90°, e.g. in the manifold cabinet or for wall and ceiling ducts, 153 mm long

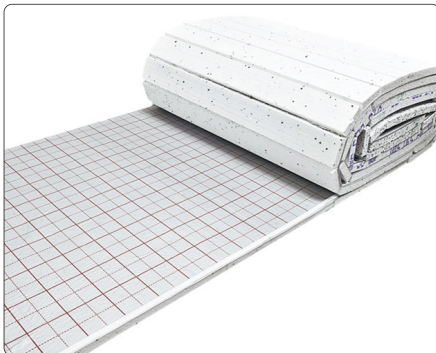
080002 Pipe support vario



Protection tube

Black, slotted, as pipe ducts in movement joints, 30 cm long/protection tube

080015-15 17,0 x 2,2 mm 50 pc./15 m
080015-50 17,0 x 2,2 mm 50 m/roll
080016-50 22,0 x 2,4 mm 50 pc./box



RYGOROLL

Impact sound insulation roll EPS 040 DES sg 20-2 mm and 30-2 mm, self-adhesive

080423-20

RYGOROLL 20 mm 10 m²/roll

080423-30

RYGOROLL 30 mm 10 m²/roll

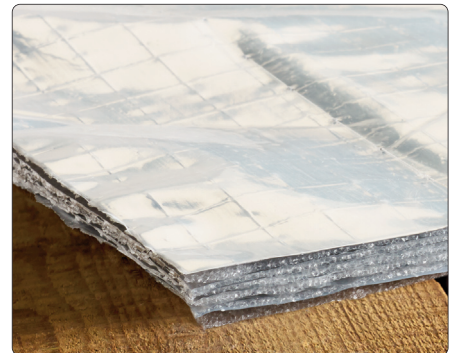


Dry fill

For leveling, filling and insulating against heat, cold and noise made from the purest natural raw materials; can be used unbound in liquid screed

080351-60

60 l/bag

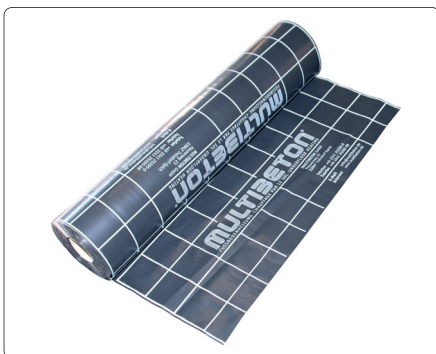


Foil insulation

Multi-layer heat and impact sound insulation, approx. 6.5 mm flat

080352-20

20 m²/roll



MB-PEF

Polyethylene foil printed with MULTIBETON installing grid (10 cm) and guaranteed to be 0.2 mm thick

080011sw

200 m²/roll



MB-SKB

Adhesive tape for sealing the MB-PEF with liquid screed, tested and proven even at sub-zero temperatures, 5 cm wide

080013-66

66 m/roll

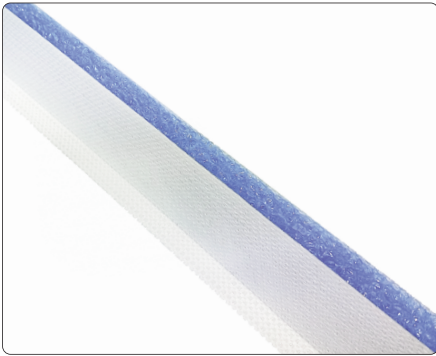


Edge insulation strip

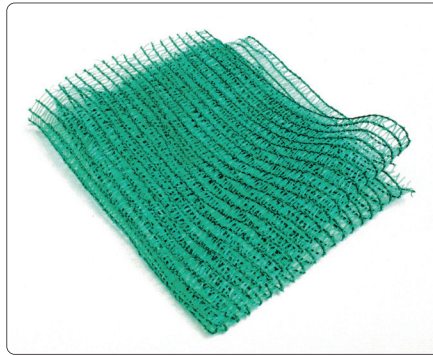
with overlap foil, 150 mm (h) x 10 mm (w)

080012-25

25 m/roll



Expansion joint profile FLS
80 mm (h) x 10 mm (w)
080306-80 Expansion joint profile FLS
1 profile = 1 m



Hold-down grid
Against floating with liquid screed (e.g. ESF-55/50), 2 m wide, made of HDPE, mesh size 11 mm x 4 mm
080014-200 Hold-down grid
200 m²/roll
080014-KL Hold-down grid
custom length



Sealing roll
Moisture barrier with adhesive strip to protect insulation and floor surfaces against rising damp according to DIN/EN, roll size 1.25 m x 40 m; thickness: 3 mm foam backing + 0.3mm PE film = 3.3mm
080017-50
50 m²/roll



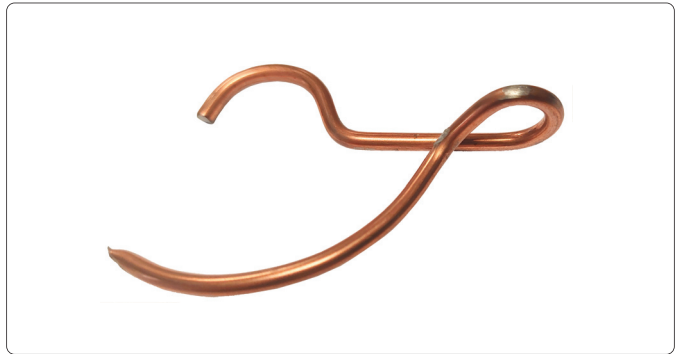
Sealing tape
Self-adhesive moisture barrier to protect insulation and floor surfaces against rising damp according to DIN/EN, roll size 0.02 m x 15 m; thickness: 3 mm foam backing + 0.3mm PE film = 3.3mm
080017-15
15 m/roll



Pulley

Assembly aid consisting of a deflection pulley with screw clamp for variable and supporting pipe routing

080124 Pulley



Fixing anchor

The anchor is used for short-term directional guidance of the MB system pipes on the insulation layer. This assembly aid can be removed again after laying.

080115 Fixing anchor 1 bag = 20 pc.



Installation tools

The MB installation device (MB-VT and MB-VH) can be borrowed or ordered on a license basis. The toolboxes are provided on loan.

- 080101 MB-VT (installation heating boiler)**
- 080102 MB-VH (downcoiling unit)**
- 080103 Schuko plug adapter France**
- 080112 Toolbox for TRB-17**
- 080113 Toolbox for FLS 35/27**



MB-KWS (cooling water station for MGA-40 & MWA)
Consisting of booster pump, pressure hose, suction hose and Geka couplings
080141 MB-KWS on loan



Clip rail cutter
Cutting the MB Steel clip rails (MB-CS17/12)
080121 Clip rail cutter



Pipe cutter
To cut MB System pipes
080122 Pipe cutter



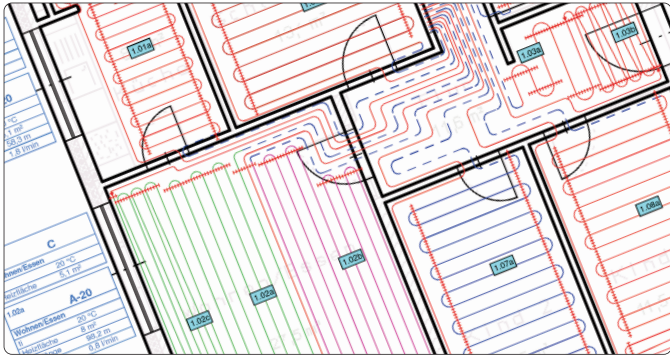
Binding machine
The binding machine for fixing the MB System pipes to a reinforcement (e.g. MFF & MTB) is provided for rent against a deposit and fee. Availability should be checked at least 4 weeks prior to site use.
080131 deposit
080301 loan fee up to 2,999 m MB System pipe
080302 loan fee starting from 3,000 m MB System pipe



Binding wire
1 roll is sufficient for approx. 120 bindings, which corresponds to approx. 100 m MB Euro system pipe 22 (MB-ER22) or MB Euro system pipe 17 (MB-ER17), depending on the binding frequency.
080132 Binding wire ca. 100 m/roll



Starter kit
Consisting of pipe cutter, clip rail cutter, coupling, connection fitting, lighter and folding ruler
080123 Starter kit



Multiplexer

Consisting of HT2000 with fully integrated MULTIBETON database as online version incl. CAD module and heat load calculation

000265 Multiplexer annual licence fee