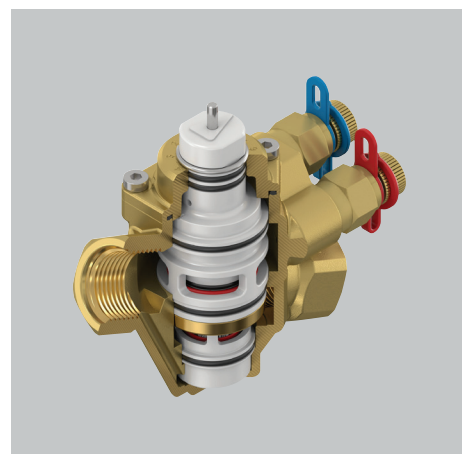
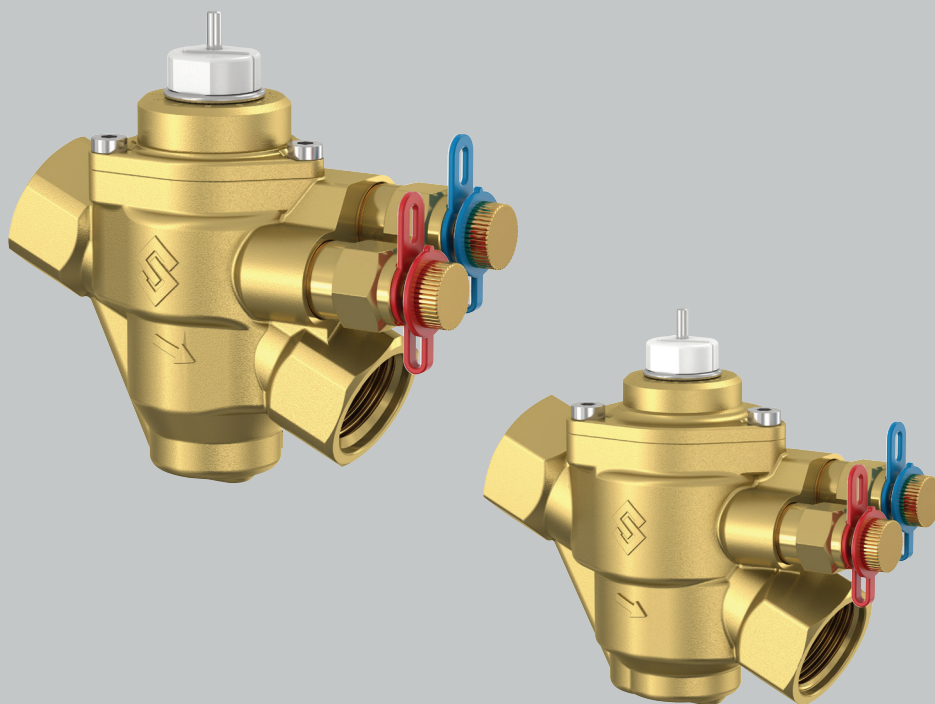
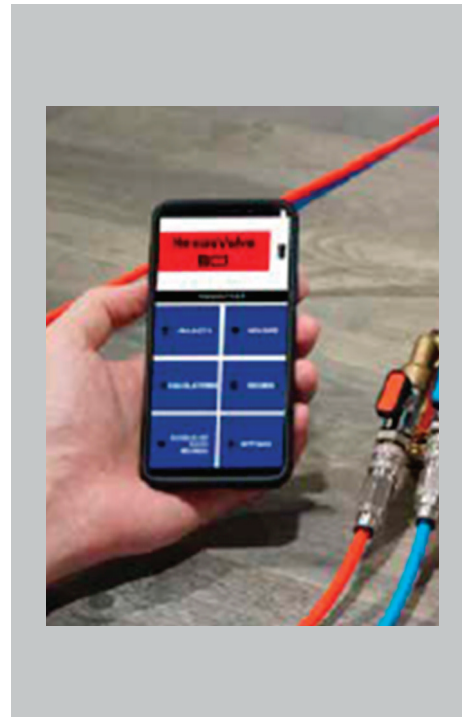
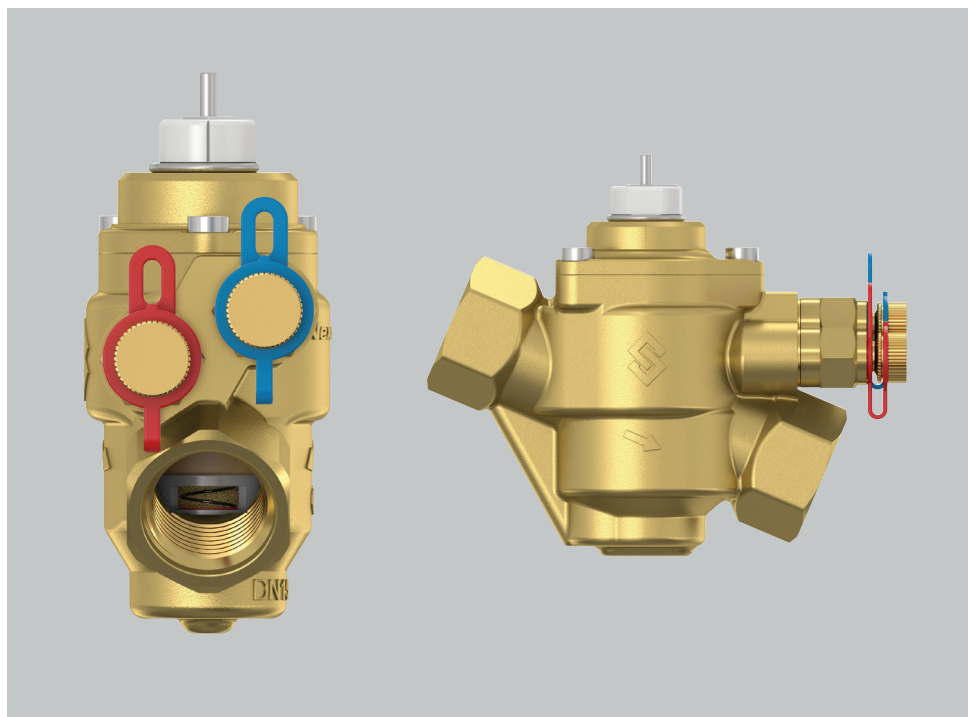


Operating instructions

for installation, commissioning & service



NexusValve *Vivax G2 EQM / Vivax EQM* Pressure-independent control valve



Nexus Valve

Vivax G2 EQM / Vivax EQM

Abbreviations:

EQM	Equal-percentage characteristics Equal-percentage-modified (related to valve characteristics)
FCU	Fan coil unit (fan convector)
BMS	Building management system
Max.	Maximum
Min.	Minimum
PICV	Pressure Independent Control Valve

Table of contents

1.	Safety instructions	4
1.1	Rules / regulations	4
1.2	Intended use	6
1.2.1	Intended use	6
1.2.2	Impermissible use	6
1.3	Product name	6
1.4	Hazard warning	6
1.5	Commissioning	7
1.6	What to do in the event of faults or leaks	8
1.7	Spare and wear parts	8
1.8	Requirements for qualified professionals	8
1.9	Liability	8
2.	Introduction	9
2.1	Description	9
2.2	Advantages	9
2.3	Design and functions	10
2.4	Installation	11
2.5	Valve characteristic curve	13
3.	Product data sheet	14
3.1	Product overview	14
3.2	Specifications	15
3.2.1	NexusValve Vivax G2 EQM DN15-20	15
3.2.2	NexusValve Vivax G1 DN25-50	15
3.3	Dimensions	16
3.3.1	NexusValve Vivax G2 EQM, DN15-20, FT x FT	16
3.3.2	NexusValve Vivax G1, DN25-32, FT x FT	17
3.3.3	NexusValve Vivax G1, DN40-50, FT x FT	17
3.4	Flow diagrams	18
4.	Accessories / spare parts	19
4.1	Actuators for NexusValve Vivax G2 EQM	19
4.2	Actuators for NexusValve Vivax EQM	19
4.3	Accessories	20
5.	Actuators	21
5.1.1	Thermoelectric actuator 24 V AC, 0-10 V control	22
5.1.2	Thermoelectric actuator 24 V AC/DC, 0-10 V control with return path	23
5.1.3	Thermoelectric actuator 230 V, open/closed	24
5.1.4	Thermoelectric actuator 24 V AC/DC, open/closed	25
5.2	Electromotive actuator	26
5.2.1	Electromotive actuator 24 V AC/DC, 0-10 V control	27
5.2.2	Electromotive actuator 24 V AC/DC, 3-point	28
5.2.3	Electromotive actuator 230 V, 3-point	29
5.3	Actuator for NexusValve Vivax EQM (DN25 - DN32)	30
5.4	Actuator for NexusValve Vivax EQM (DN40-50)	32
6.	Instructions for decommissioning, disassembly, environmental protection and disposal of electrical and electronical equipment	34

1. Safety instructions



These operating instructions are primarily designed for the safe use and installation of the product and make no claims to completeness. These operating instructions describe the functionality of the product and are intended to provide information about the required safety instructions and to draw attention to possible hazards. Further technical information can be found in the other applicable documents. These operating instructions are valid only for the described product and are not subject to the manufacturer's Update service. The sketches and drawings they contain are not suitable to scale.

- Keep the operating instructions within easy reach of all employees instructed to carry out work involving this product so that they can refer to them as required.
- Keep the operating instructions in a clean, complete and legible condition throughout the entire period of use.
- Read the operating instructions before working with the product for the first time and use them as guidance whenever uncertainties or doubts arise as to how the product should be handled.
- Should you come across any discrepancies when reading these operating instructions or should anything remain unclear, please contact the manufacturer.

Target group:

These instructions are intended exclusively for authorised trained experts.

Only trained experts/installers authorised by the respective competence authority are permitted to work on heating systems and domestic water, gas and electric circuits.

1.1 Rules / regulations

Please observe the applicable safety regulations, environmental law and the legal rules for assembly, installation and operation. Please also observe the applicable guidelines of the DIN, EN, DVGW, VDI and VDE (including lightning protection) and all current relevant country-specific standards, laws and guidelines. Old and newly enacted regulations and standards apply where they are relevant in each case. You should also observe the regulations of your local energy company.

Regulations:

- The statutory accident prevention regulations,
- The statutory environmental protection regulations,
- Liability/Insurance regulations,
- The pertinent safety requirements of DIN, EN, DVGW, TRGI, TRF and VDE,
- ÖNORM, EN, ÖVGW-TR Gas, ÖVGW-TRF and ÖVE,
- SEV, SUVA, SVGW, SVTI, SWKI and VKF.
- And all new and regionally applicable regulations and standards

Extract:

Machinery Directive (MRL) 2006/42/EC

Pressure Equipment Directive (DGRL) 2014/68/EU

ISO 5208: Industrial valves – Pressure testing of metallic valves

Installation and construction of heating systems:

- DIN EN 4753, Part 1: Domestic water heaters, domestic water heating systems and domestic hot water storage vessels
- DIN EN 12828: Heating systems in buildings – planning of water heating systems
- DIN 18421: Insulation of service installations
- DIN 4751: Safety requirements for heating installations
- DIN EN 12502: Corrosion protection of metallic materials
- DIN EN 60534-2 -3: Relay valves for process control - flow capacity
- DIN EN 60534-4: Relay valves for process control - acceptance and inspections

Additional notes:

- VDI 2035: Heating water quality requirements
- VDI 6002 Sheet 1: Solar heating for domestic water - General principles, system technology and residential buildings
- VDI 6002 Sheet 2: Applications in student accommodation, retirement homes, hospitals, indoor swimming pools and on camping sites

Electrical connection:

- VDE 0100: Set up of electrical equipment, grounding, protective conductors, equipotential bonding conductors, low-voltage systems
- VDE 0701: Testing after repairs or changes to electrical equipment
- VDE 0185: General principles for the installation of lightning protection systems
- VDE 0190: Main equipotential bonding of electrical systems

For electrical connection, e.g. of a servomotor:

Electrical works may be carried out only by qualified electricians. The VDE regulations and the provisions of the competent energy authority must be observed.

Instructions for performing works on the system

- Disconnect the system from the mains and double check to ensure that no voltage is being supplied (e.g. at a separate circuit breaker/fuse or a main switch).
- Secure the system from restarting / switching to auxillary power supply.
- If gas is used as fuel, close the gas shut-off valve and secure it against accidental opening. Repairs to safety-relevant components are prohibited.

Permissible mains supply and operating parameters

- Pressure rating: PN25
- Media temperature: 0 ... 90°C
CAUTION! Risk of scalding at media temperatures > 60°C
- Approved medium (DIN EN 12828): Heating water according to VDI 2035 Water/glycol mix with max. 10 % glycol proportion
CAUTION! The use in close proximity to domestic water is prohibited.

* When using water-glycol mixtures, the volume flow deviates from the table values and results of values from the measuring computer can differ according to deviating density and viscosity. In this case, a correction of the corresponding calculation must be made.

Ambient conditions:

- Max. permissible ambient temperature: 40°C, in dry ambient conditions: Avoid installing the valve in areas with high humidity, where there is a risk of an electric shock as well as increased risk of corrosion of the valve housing.
- The product must be installed in enclosed, frost-free spaces.
- Any sound emissions and heat radiation must be taken into account at the installation site.
- Observe the safety areas in accordance with EN 60529 when designing and installing the system.
- The fire protection classes of thermal insulation used by the customer must be observed.

1.2 Intended use

1.2.1 Intended use

The product can be used to optimise the supply of individual heat sinks (e.g. fancoil units, air conditioners, or unit heaters), as individual room control (e.g. in hotels), as zone valves for the supply control of conference rooms and large offices or the supply control of separate floors or lines in residential buildings.

1.2.2 Impermissible use

Using the device in any way that does not correspond to the intended use may be hazardous and is therefore prohibited. In particular, the following is not allowed:

- The use of liquids other than the above-mentioned fluids with the described properties
- Use of the device without prior knowledge of the operating instructions
- Use of the device without legible warning and information signs
- Use of the device in a faulty condition



The electrical, constructive and hydraulic components must not be altered! Doing so will have an adverse impact on the safe functioning of the system.

1.3 Product name

Designation	NexusValve Vivax G2 EQM	NexusValve Vivax EQM
Type	Pressure-independent control valve (PICV)	Pressure-independent control valve (PICV)
Nominal size	DN15 – DN20	DN25 – DN50
Manufacturer	Meibes System-Technik GmbH	Meibes System-Technik GmbH

1.4 Hazard warning

The safety and warning information draws attention to residual hazards that cannot be avoided due to the design and construction of the device. Please always observe the measures shown for avoiding these hazards.

Never alter or modify the product by yourself. Such work may only be carried out by qualified professionals. This also applies to the electrical installation.

When the system is in operation, water-regulating components will be hot. Touching these system components can lead to scalding. The heat-conducting components must be operated with permanent thermal insulation. This thermal insulation not only prevents unnecessary thermal losses, but also protects against accidental contact and burns. The insulation may only be removed for maintenance/repair purposes and must be properly replaced immediately after completion.

The system is operated using hot, high-pressure water, which can cause scalding on contact. The opening of the bleed or venting devices must be done with caution, and reassurance that no work is being performed on components under pressure.

The control components (controller, actuators, pumps, etc.) are powered by the mains voltage. **Therefore, always ensure that the system is disconnected from the mains supply when carrying out any maintenance or repair work.** Secure the system against unauthorised operation. Life-threatening electric shocks can be caused by spraying or splashing water. Escaping water may also disable the safety devices.

Any changes made to the product that have not been authorised by the manufacturer will invalidate any warranty claims.

Residual hazards:

The product has been built in accordance to the most actual and recognised safety regulations. The following residual hazards may arise during installation, commissioning, maintenance and disassembly:

Warning: Risk of scalding from high media temperature

- Work with particular caution.
- Use safety clothing (e.g. heat-resistant protective gloves).
- If necessary, surface temperature must be measured before commencing any work.
- Use only designated tools.

Hazard: Risk of injury from electrical voltage

- Only trained and qualified electricians may undertake work on electrical equipment.
- Electrical installation spaces must always be kept locked.

Warning: Risk of cuts and scratches due to the possibility of sharp edges

- Work with particular caution.
- Use safety clothing (e.g. protective gloves).

Warning: Risk of impact/blunt force trauma in case of a valve freefall.

- Wear personal protective equipment (such as protective work shoes).

Warning: Risk of injury due to cold media/surfaces

- Wear personal protective equipment (such as protective work gloves).

1.5 Commissioning

Connection points must be tightened before commissioning and pressure testing. Before the first commissioning, the system must be checked for leak-tightness, the correctness of the hydraulic connections and precise and correct electrical connection. In addition, as required in accordance with DIN 4753, the system must be flushed correctly. Commissioning must be carried out by a specialist, whose name must be noted in writing. In addition, the settings must be recorded in writing. The technical documentation must remain with the equipment.

1.6 What to do in the event of faults or leaks

Close existing media lines with the respective valve and contact a qualified professional or the manufacturer's customer service.

The device will only be cleared for operation again when the qualified professional has fixed the fault and restored the device to its original condition.

1.7 Spare and wear parts

All spare parts to be used, must correspond to the technical requirements defined by Meibes System-Technik GmbH. This is guaranteed only by using genuine spare parts. The manufacturer is not liable for damage caused by the use of unapproved spare parts or ancillary materials. Appropriate spare parts can be found in our documentation.

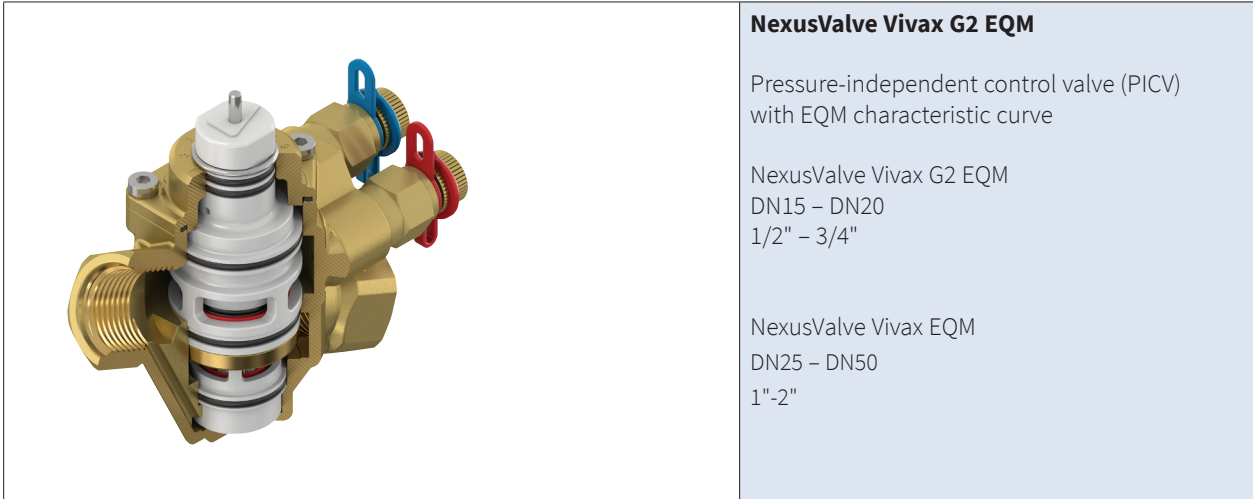
1.8 Requirements for qualified professionals

A qualified professional must have undergone advanced technical training and have sufficient experience to independently perform complicated tasks or work associated with residual hazards. Each experience refers to a certain specialty, e.g. Maintenance, Electrical and/or HVAC Technician. In preparation for impending work, a qualified professional must be able to correctly estimate the feasibility, risks and hazards of the work as well as the equipment required. A qualified professional is expected to understand complex plans and descriptions of minimum preparation, and to obtain missing and required detailed information by suitable means. The qualified professional must be able to restore and verify the intended/original state of the system. A worker can be a trained expert in several fields. For the performance of electrical works, only trained electricians according to DGUV regulation 3 may be used.

1.9 Liability

We reserve all copyrights to this document. Any misuse, in particular reproduction or disclosure to third parties, is prohibited. These installation and operating instructions must be given to the customer. The technician carrying out and/or authorising the work (for example the installer) must explain the functioning and operation of the system to the customer in a comprehensible way.

2. Introduction



2.1 Description

The NexusValve Vivax G2 EQM is a combination of a pressure-independent flow limiter and a control valve that maintains a constant flowrate irrespective of any fluctuations in pressure in the heating or cooling system.

When installed with an actuator, the NexusValve Vivax G2 EQM is a combination of an automatic flow limiter and a two-way control valve. The integrated differential pressure regulator ensures a high level of control authority and at the same time prevents an overflow rate in the system at all times. Without an actuator, the NexusValve Vivax G2 EQM is an automatic flow limiter. In this way, the valve guarantees the intended flow in the terminal devices, regardless of requirements from other consumers or lines in the system, thus saving energy.

Measuring connections enable a quick function test. The equal-percentage modified valve characteristic (EQM) and the typical characteristic curve of heating and cooling systems result in a linear overall characteristic curve that enables efficient control of the system.

2.2 Advantages

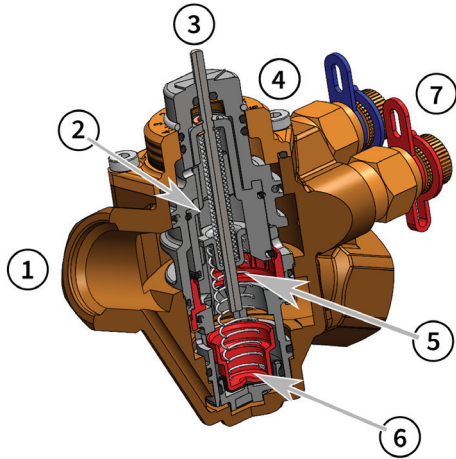
- Higher thermal comfort achieved through precise control of the heating / cooling demand
- Precise regulation of the flowrate achieved through extended stroke distance
- Automatic hydraulic balancing
- Higher energy savings due to precise pump adjustment during flow measurement via the measurement ports
- Easy system fault detection by checking the actual flowrate
- No excessive flowrates, no unnecessary energy consumption
- Easy valve selection

Nexus Valve

Vivax G2 EQM / Vivax EQM

2.3 Design and functions

The NexusValve Vivax G2 EQM essentially consists of the components listed here, which enable it to limit and regulate the volume flow, compensate for pressure fluctuations as well as check the required minimum differential pressure.



Legend:

- 1 - Valve body
- 2 - Valve cylinder
- 3 - Tappet
- 4 - Cover with scale* 0...10
- 5 - Valve spring
- 6 - DP regulator
- 7 - Test points for connection of optional measuring computer BC3

* Valve scale presetting (values in [l/h])

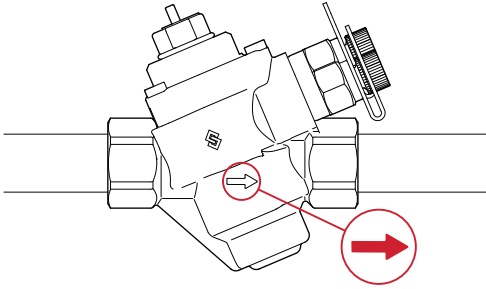
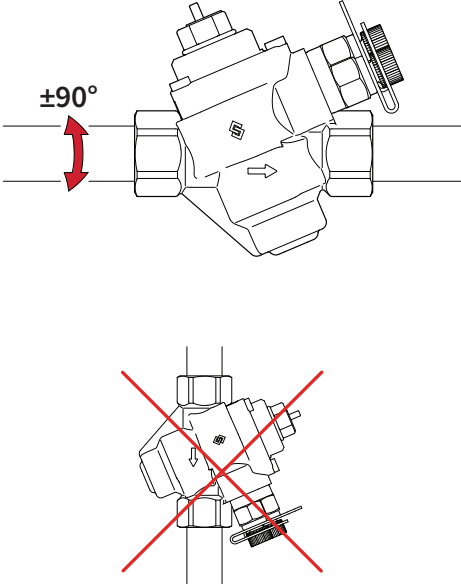
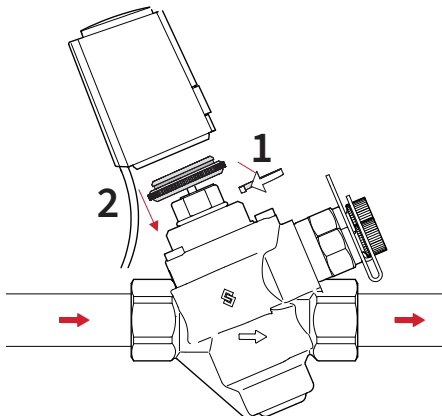
Valve scale Presetting	0	1	2	3	4	5	6	7	8	9	10
DN15L	68	78	88	98	110	122	134	150	167	187	208
DN15S	172	206	245	293	355	428	507	588	683	779	861
DN20	335	411	499	593	678	821	1017	1178	1366	1537	1634

The flowrate can be limited by rotating the valve cylinder in relation to the valve housing. The preset point is indicated by the arrow on the valve cylinder and the cover. Pressure fluctuations in the system are reduced by the NexusValve Vivax G2 EQM in the lower part, which keeps the flow constant.

The flow rate is controlled by combining the NexusValve Vivax G2 EQM with an actuator that can be screwed directly onto the NexusValve Vivax G2 EQM. The actuator operates the tappet, thus partially closing the valve and reducing the flowrate. This is counteracted by the valve spring, which opens the valve again and thus increases the flowrate.

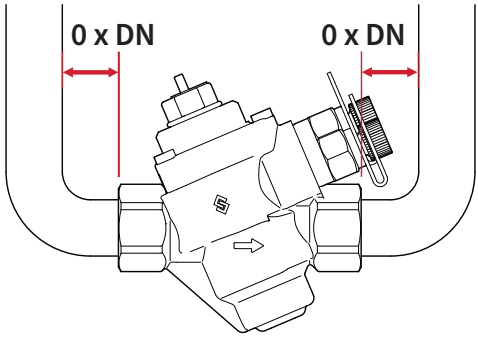
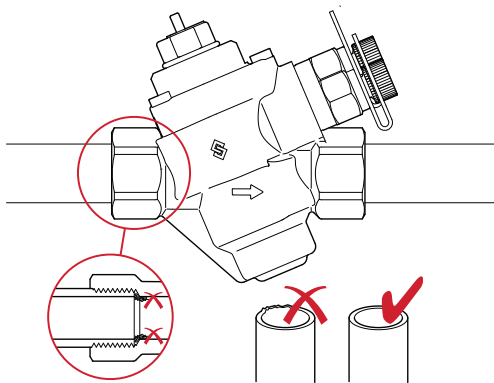
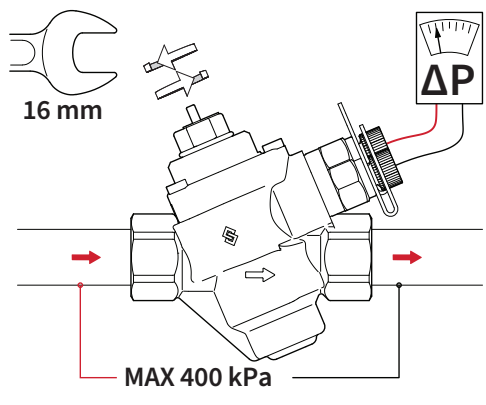
To check the flowrate, the NexusValve Flowmeter BC3 is connected to the measuring ports of the NexusValve Vivax G2. If a value between the min. and max. differential pressure of the working range (see Section 3.1) is displayed, the required flowrate can be set.

2.4 Installation

Figures	Descriptions
	<p>The arrow on the housing of the NexusValve Vivax G2 EQM indicates the flow direction.</p>
	<p>When used as an automatic flow limiter without an actuator, the valve can be mounted in any position 360° around the pipe axis.</p> <p>Recommended: Installation with the measurement ports pointing upwards; in horizontal position: rotated around +/-90°</p>
	<p>Both the NexusValve Vivax G2 EQM DN15-20 and the actuator can be installed in any required position.</p> <p>Recommended: Installation with the measurement ports pointing upwards.</p> <p>The minimum distance/space requirements for:</p> <ul style="list-style-type: none"> - Installation, commissioning - Measurement procedures as well as maintenance/service must be observed <p>Notes on installation dimensions/ installation space/ space requirements in Section 5 Actuator (from p. 20). Please notice the respective manufacturer's instructions.</p>

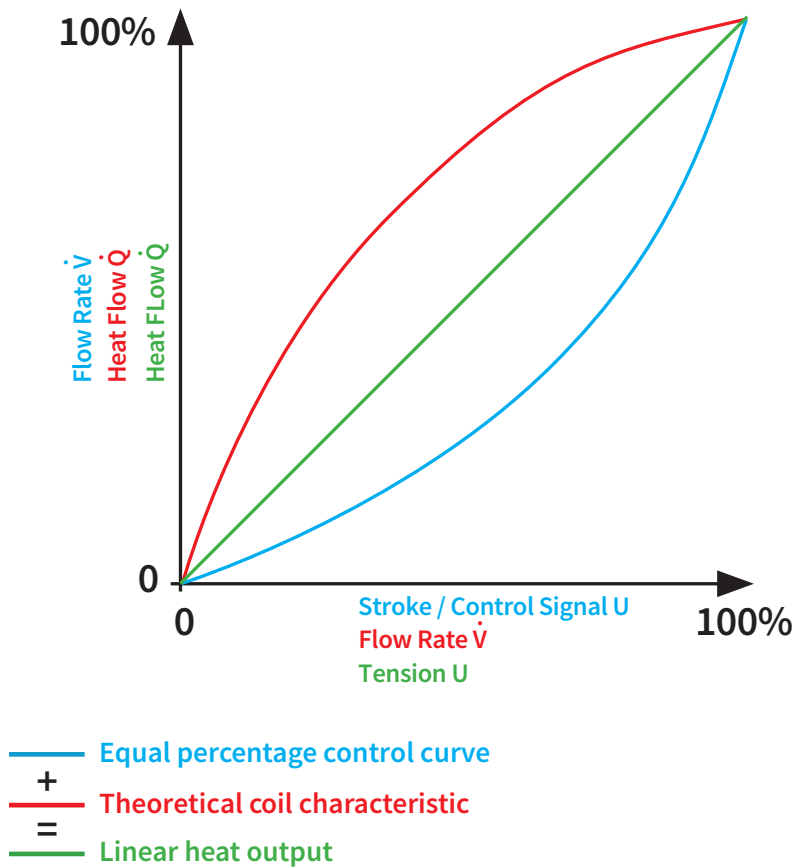
Nexus Valve

Vivax G2 EQM / Vivax EQM

	<p>The NexusValve Vivax G2 EQM can be installed directly on elbows, flexible hoses, etc. No straight piping is required.</p>
	<p>For a clean thread seal, the pipe ends must be deburred before connecting and the threads must be free of dirt for assembly and sealing.</p> <p>If necessary, it is recommended to add a dirt trap and separator to the system.</p> <p>Note: Flush and vent the heating system properly after the installation, and before the initial commissioning. See Section 1.5 Commissioning (p. 7).</p>
	<p>The maximum differential pressure on the NexusValve Vivax G2 EQM valve must not exceed 400 kPa, either in normal operation or with the valve in the closed position.</p> <p>The approximate presetting of the flowrate is done with an open-end spanner (size 16).</p> <p>For precise flow adjustment, the NexusValve Flowmeter BC3 is connected to the NexusValve Vivax G2 EQM.</p> <p>The presetting of the valve is then adjusted with the open-end spanner until the desired flow is displayed on the NexusValve Flowmeter BC3.</p>

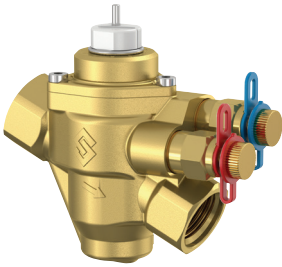
2.5 Valve characteristic curve

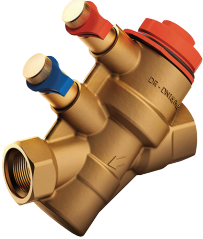
The NexusValve Vivax G2 EQM has an equal-percentage modified valve characteristic curve (EQM characteristic curve). This compensates for the unfavourable power curve of a typical heating system and thus creates an overall linear control characteristic curve.



3. Product data sheet

3.1 Product overview

	Nominal size	Flow rate range [l/h]	Differential pressure across the valve [kPa]	Valve stroke [mm]	Colour code
	DN15L	68 - 208	15 - 400	6.0	White
	DN15S	172 - 861	15 - 400	6.0	Red
	DN20	335 - 1.634	23 - 400	6.0	White

	Nominal size	Flow rate range [l/h]	Differential pressure across the valve [kPa]	Valve stroke [mm]	Colour code
	DN25	865 - 2340	30 - 400	3.5	White
	DN25	1750 - 3330	30 - 400	3.5	Black
	DN32	1910 - 4400	30 - 400	3.5	Black
	DN40	3670 - 7560	30 - 400	12.0	White
	DN50	5180 - 12600	30 - 400	12.0	Black

* illustrations exemplary

3.2 Specifications

3.2.1 NexusValve Vivax G2 EQM DN15-20

Connection flange in accordance with DIN EN 10226: DN15 DN20	Rp 1/2 Rp 3/4
Dimensions	DN15, DN20
Pressure rating	PN25
Operating temperatures	0 ... +90 °C
Working range	15 - 400 kPa
Materials used for the individual components: Housing, cover, measuring port Spindle, springs, screws, snap rings Valve insert O-rings Membrane	CW602N (see warning notice) 1.4305 and 1.4310 PPS GF40 or PPS GF40 PTFE-modified P-EPDM EPDM (fibre reinforced)
Labels / markings: Nominal size Pressure rating Flow arrow "NexusValve Vivax" logo Flamco logo Scale for preset value DR logo (for dezincification-resistant brass)	

3.2.2 NexusValve Vivax G1 DN25-50

Connection flange in accordance with DIN EN 10226	Rp 1, Rp1 1/4, Rp1 1/2, Rp 2
Operating temperatures	-20 ... +120°C
Pressure rating	PN25
Working range	30 - 400 kPa
Materials used for the individual components: Valve housing Valve insert Seals Membrane	DR brass CW602N PPS GF40 O-ring made from P-EPDM EPDM reinforced
Labels / markings: Nominal size Pressure rating Flow arrow	

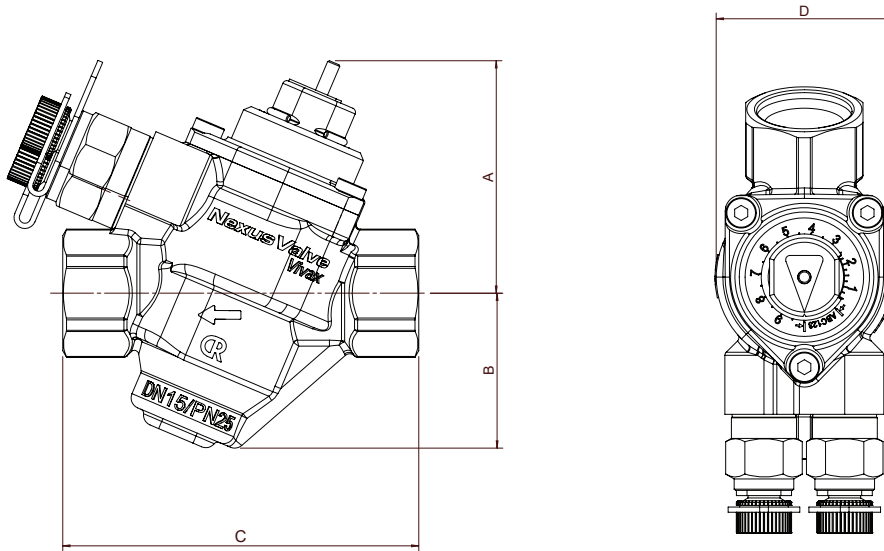
For further information: see the separate operating instructions for the NexusValve Vivax.

Nexus Valve

Vivax G2 EQM / Vivax EQM

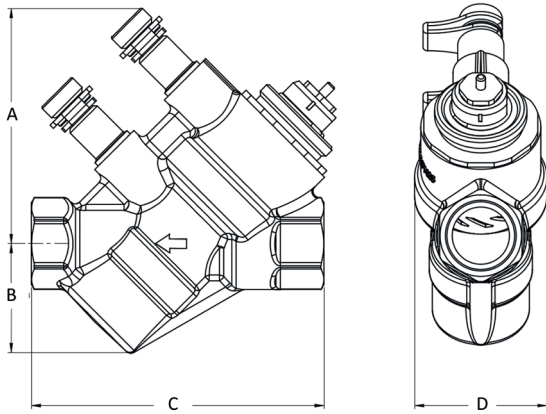
3.3 Dimensions

3.3.1 NexusValve Vivax G2 EQM, DN15-20, FT x FT



Nominal size	Pipe connection	A [mm]	B [mm]	C [mm]	D [mm]	Art. No.
DN15L	1/2"	54	36	82	41	MN80597.060
DN15S	1/2"	54	36	82	41	MN80597.061
DN20	3/4"	58	41	101	50	MN80597.062

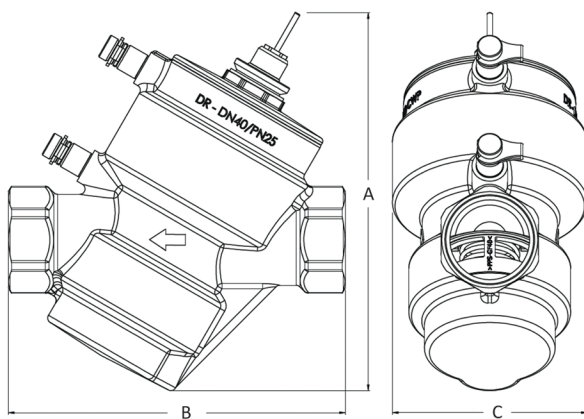
3.3.2 NexusValve Vivax G1, DN25-32, FT x FT



Nominal size	Pipe connection	A [mm]	B [mm]	C [mm]	D [mm]	Art. No.	
						Thermoelectric actuator	Electromotive actuator
DN25S	1"	81	56	127	71	MN80597.0631	MN80597.0632
DN25H	1"	81	56	127	71	MN80597.0641	MN80597.0642
DN32	1 1/4"	87	72	154	82	MN80597.0651	MN80597.0652

*Set consisting of valve and actuator (actuators see chapter 4.2)

3.3.3 NexusValve Vivax G1, DN40-50, FT x FT



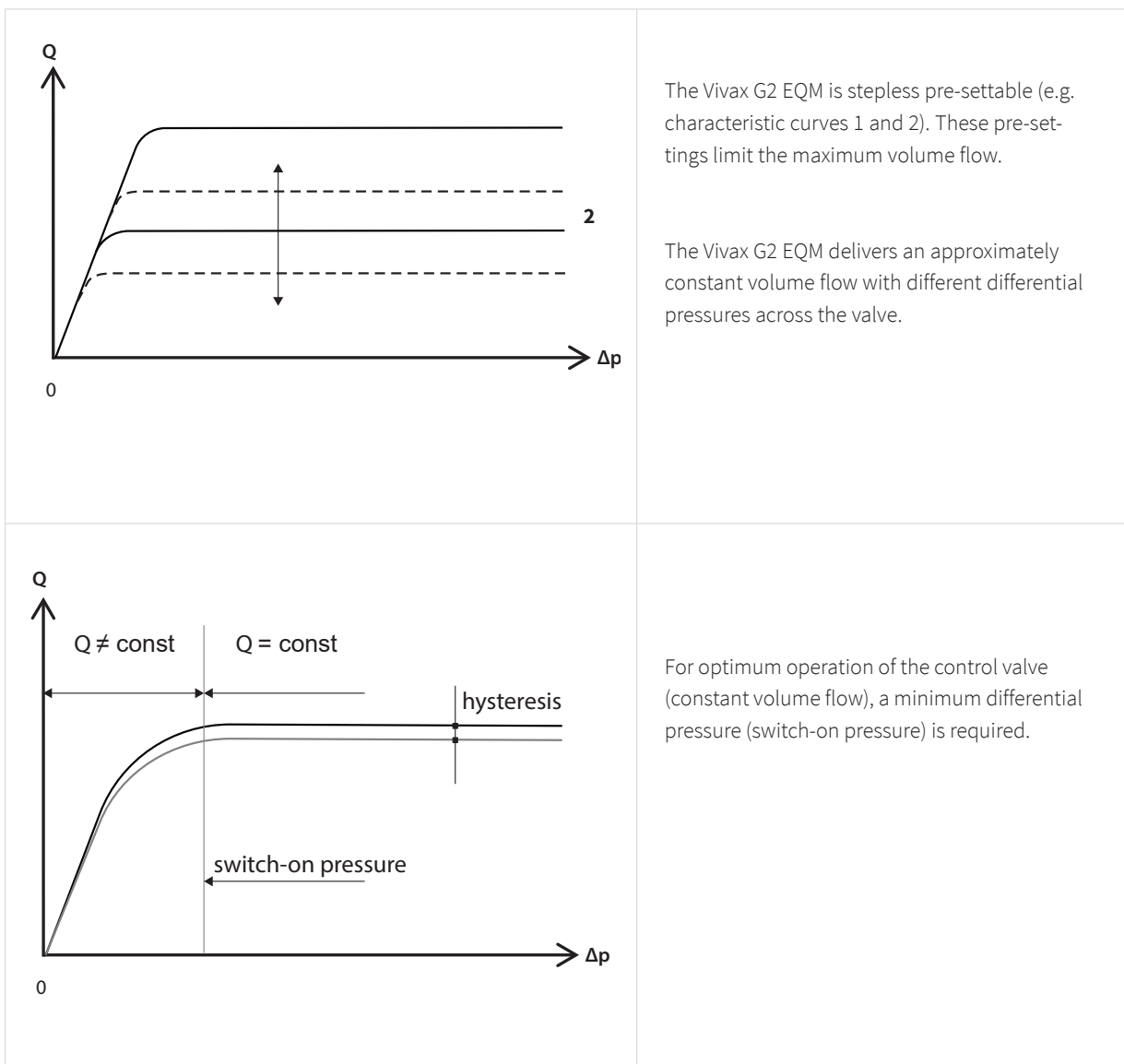
Nominal size	Pipe connection	A [mm]	B [mm]	C [mm]	Art. No.
					Electromotive actuator
DN40	1 1/2"	212	189.5	∅ 109.5	MN80597.0662
DN50	2"	210	195	∅ 110.5	MN80597.0672

*Set consisting of valve and actuator (actuators see chapter 4.2)

3.4 Flow diagrams

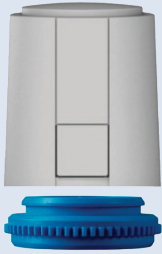

The equal-percentage valve characteristic (EQM) in all pre-settings always ensures optimum controllability of the transferred heat. The typical (degressive) characteristic of a heat exchanger is generally difficult to control. This is compensated by the (progressive) equal-percentage valve characteristic.

The result is a linearized characteristic of the transferred heat flow that is ideal for control as a function of the actuating voltage of the actuator.






4. Accessories / spare parts

4.1 Actuators for NexusValve Vivax G2 EQM

Accessories	Item No.	Size	Descriptions	Chapter
	MN80597.070	-	Thermoelectric actuator 24 V AC, 0-10 V control	See chapter 5.1.1
	MN80597.071	-	Thermoelectric actuator 24 V AC/DC, 0-10 V control	See chapter 5.1.2
	MN80597.072	-	Thermoelectric actuator 230 V, open/closed	See chapter 5.1.3
	MN80597.073	-	Thermoelectric actuator 24 V AC/DC, open/closed	See chapter 5.1.4
	MN80597.074	-	Electromotive actuator 24 V AC/DC, 0-10 V control	See chapter 5.2.1
	MN80597.075	-	Electromotive actuator 24 V AC/DC, 3-point	See chapter 5.2.2
	MN80597.076	-	Electromotive actuator 230 V, 3-point	See chapter 5.2.3



4.2 Actuators for NexusValve Vivax EQM

	MN80597.077	for DN25-32	Thermoelectric actuator 24 VAC 0-10V	See chapter 5.3
	MN80597.078	for DN25-32	Electromotive actuator 3-point, 24 VAC	See chapter 5.3
	MN80597.079	for DN40-50	Electromotive actuator for DN40 and DN50, 3-point, 24 VAC	See chapter 5.4

Nexus Valve


Vivax G2 EQM / Vivax EQM

4.3 Accessories

	MN80597.0011	M 30 x 1.5	Shut-off cap for DN15-DN32
	MN80597.2	-	Nexus Valve flowmeter, type BC3 Measuring computer for hydraulic balancing

5. Actuators

5.1 Thermoelectric actuators

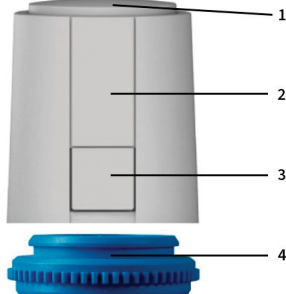
	Open/closed and modulating actuator
	Thermoelectric
	NexusValve Vivax G2 EQM DN15-DN20 1/2" – 3/4"

The actuating mechanism of the thermoelectric actuator works with a PTC-heated expansion element and a compression spring. The expansion element is heated by applying the operating voltage and the integrated tappet is moved as a result. The force created by the movement is transmitted to the valve tappet and thus opens or closes the NexusValve Vivax G2 EQM.

The actuator is available in following designs:

Modulating 0-10 V control, 24 V AC modulating 0-10 V control,
24 V AC/DC open/closed, 230 V open/closed, 24 V AC/DC

To install the actuator, screw the supplied adapter onto the NexusValve Vivax G2 EQM. The actuator itself is plugged onto the adapter.

	<p>1 - Function indicator 2 - Actuator housing 3 - Disassembly protection 4 - Valve adapter</p>
---	---

The function indicator is used to check the valve position. When the built-in wax element expands or contracts, the function indicator moves up or down accordingly.



The function indicator must never be pressed down as this could damage the actuator.

The protection class of the actuator allows the valve to be installed in any position. The head position is permitted but not recommended (see Section 2.4), as it may shorten the life of the actuator.

Advantages:

- Compact design
- Simple installation
- Noiseless and maintenance-free
- All-round function indicator
- Low power consumption
- High functional reliability and service life

Nexus Valve

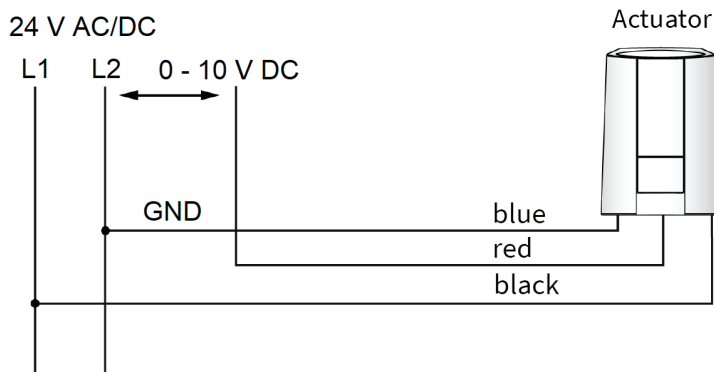
Vivax G2 EQM / Vivax EQM

5.1.1 Thermolectric actuator 24 V AC, 0-10 V control

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.2 W
	Control voltage	0 – 10 V DC (reverse polarity-proof)
	Mean regulating time	30 s/mm
	Actuation distance	8.5 mm (minus 0.5 mm over-travel)
	Actuating force	125 N + 5%
	Ambient temperature	0 – 60 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
	Connection line	White, 1 m, 3 x 0.22 mm ² PVC
	Weight, (incl. cable)	111 g
	Article number	MN80597.070

Electrical connection



Led by:

The following cable lengths are recommended for the installation of a 24 V system:

Cable	Cross section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm	45 m
NYM / NYIF	1.50 mm ²	136 m

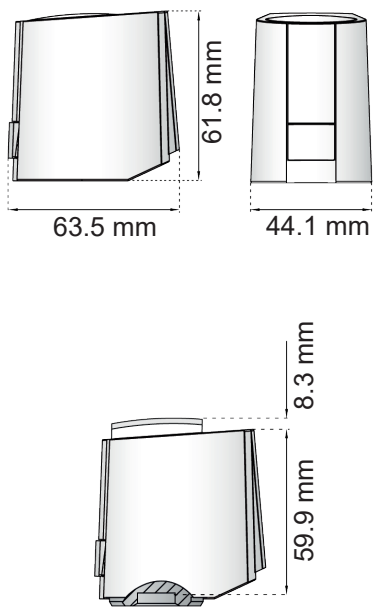
Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

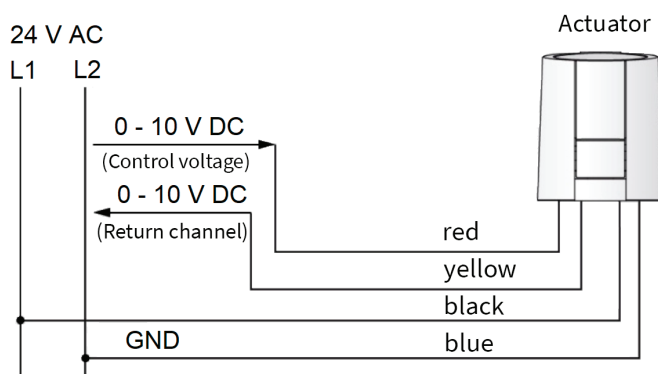
Rule of thumb: $P_{\text{Transformer}} = n \times 6 \text{ W}$
n ... Number of actuators

5.1.2 Thermoelectric actuator 24 V AC/DC, 0-10 V control with return path

Technical data

Dimensions	Specifications
	Operating voltage
	Starting position
	Power consumption
	Control voltage
	Voltage return path
	Mean regulating time
	Actuation distance
	Actuating force
	Ambient temperature
	CE conformity according to
Protection code	
Connection line	
Weight, (incl. cable)	
Article number	

Electrical connection



Led by:

Cable length recommendation, for the installation of a 24 V system:

Cable	Cross section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm	45 m
NYM / NYIF	1.50 mm ²	136 m

Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

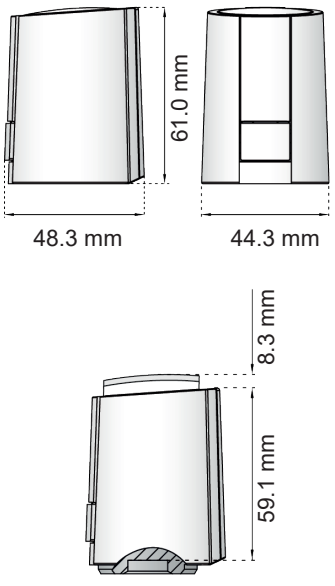
Rule of thumb: $P_{\text{Transformer}} = n \times 6 \text{ W}$
n ... Number of actuators

Nexus Valve

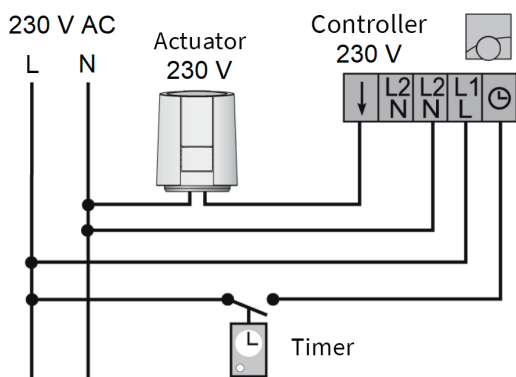
Vivax G2 EQM / Vivax EQM

5.1.3 Thermolectric actuator 230 V, open/closed

Technical data

Dimensions	Specifications	
	Operating voltage	230 V AC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.2 W
	Mode of operation	Open/closed
	Regulating time	Approx. 4.5 min
	Actuation distance	6.5 mm
	Actuating force	125 N + 5%
	Ambient temperature	0 – 60 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
Connection line	White, 1 m, 2 x 0.75 mm ² PVC	
Weight, (incl. cable)	110 g	
Article number	MN80597.072	

Electrical connection



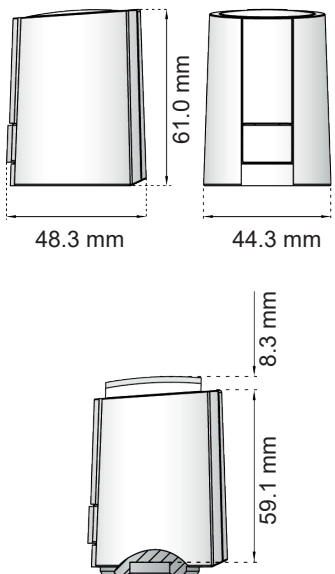
Led by:

The following cable lengths are recommended for the installation of a 230 V system:

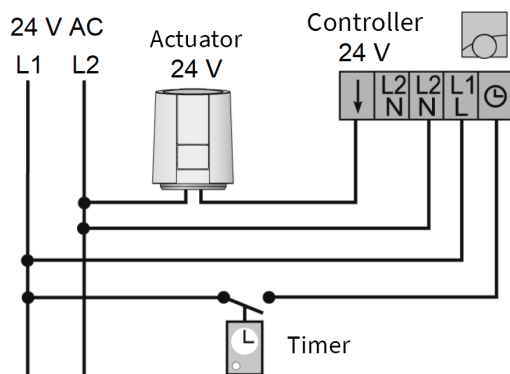
Sheathed cable:	NYM 1.50 mm ²
Flat-webbed wire:	NYIF 1.50 mm ²

5.1.4 Thermoelectric actuator 24 V AC/DC, open/closed

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC/DC
	Starting position	Currentless closed (NC)
	Power consumption	1.2 W
	Mode of operation	Open/closed
	Regulating time	Approx. 4.5 min
	Actuation distance	6.5 mm
	Actuating force	125 N + 5%
	Ambient temperature	0 – 60 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
Connection line	White, 1 m, 2 x 0.75 mm ² PVC	
Weight, (incl. cable)	110 g	
Article number	MN80597.073	

Electrical connection



Led by:

The following cable lengths are recommended for the installation of a 24 V system:


Cable	Cross section Diameter	Length
J-Y (ST) Y	0.80 mm	45 m
NYM / NYIF	1.50 mm ²	136 m

Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

Rule of thumb: $P_{\text{Transformer}} = n \times 6 \text{ W}$
n ... Number of actuators

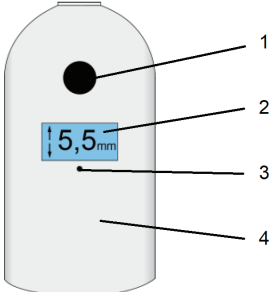
5.2 Electromotive actuator

	Modulating actuator and three-point actuator
	Electromechanical
	NexusValve Vivax G2 EQM DN15-DN20 1/2" – 3/4"

The actuating mechanism of the electromechanical actuator works with a stepper motor, a micro-controller and gears. The force of the actuator is transmitted to the valve pressure plate and thus opens or closes the NexusValve Vivax G2 EQM.

The actuator is available in the following versions: modulating 0-10 V control, 24 V AC 3-point, 24 V AC/DC 3-point, 230 V

To install the actuator, screw the supplied adapter onto the NexusValve Vivax G2 EQM. The actuator itself is plugged onto the adapter.

	1 - Manual valve adjustment 2 - LC display (if available) 3 - LED function indicator 4 - Actuator housing
---	--



The mechanical play between the actuator and the valve adapter as well as that in the gears is recognised as valve travel. This affects the position indicator and an approx. 1 mm higher valve travel is shown in the display.

The electromechanical actuator has a multi-coloured LED to indicate the functioning of the operating states. Red and green (orange if necessary) are used as signal colours.

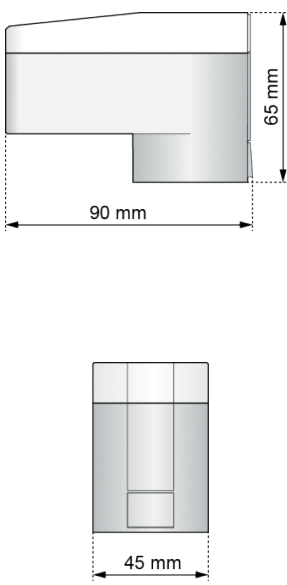


Only mount the actuator with the valve pressure plate fully retracted, otherwise the actuator could be damaged. To do this, fully retract the valve pressure plate with the manual valve adjustment or electrically.

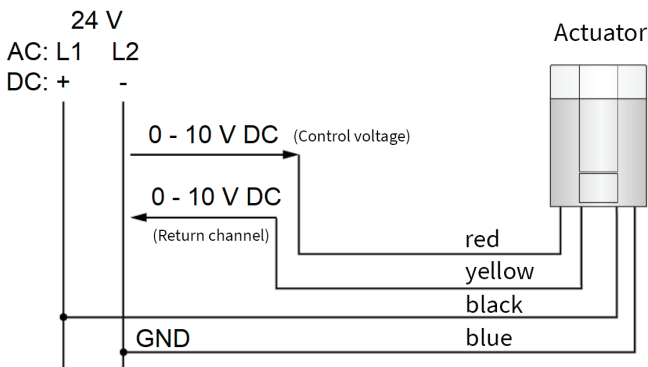
The protection class of the actuator allows the valve to be installed in any position. The head position is allowed but not recommended (see Section 2.4).

5.2.1 Electromotive actuator 24 V AC/DC, 0-10 V control

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC/DC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.4 W (2.6 VA)
	Control voltage	0 – 10 V DC
	Regulating time	15 s/mm
	Actuation distance	6.5 mm
	Actuating force	125 N -20/+40 %
	Ambient temperature	0 – 50 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
	Connection line	White, 1 m, 4 x 0.22 mm ² PVC
	Weight, (incl. cable)	155 g
	Article number	MN80597.074 MN80597.074F (with failsafe function)

Electrical connection



Led by: The following cable lengths are recommended for the installation of a 24 V system:

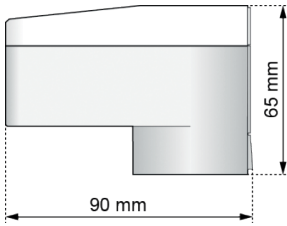

Cable	Cross section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm	45 m
NYM / NYIF	1.50 mm ²	136 m

Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power.

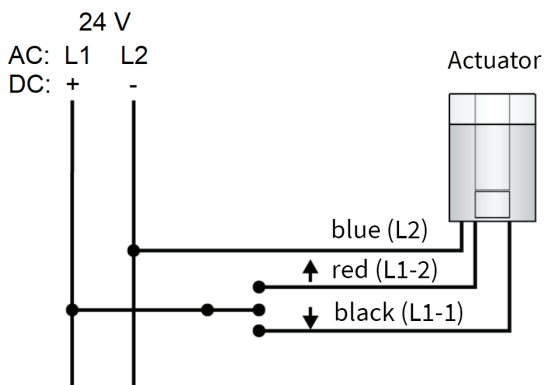
5.2.2 Electromotive actuator 24 V AC/DC, 3-point

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC/DC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.4 W (2.6 VA)
	Controller	3-point
	Regulating time	15 s/mm
	Actuation distance	8.5 mm
	Actuating force	125 N -20/+40 %
	Ambient temperature	0 – 50 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
	Connection line	White, 1 m, 3 x 0.22 mm ² PVC
	Weight, (incl. cable)	155 g
Article number	MN80597.075 MN80597.075F (with failsafe function)	

Electrical connection

The actuator is controlled via a control unit with 3-point control output (e.g. room temperature controller) or a building management system (BMS).



Led by:

The following cable lengths are recommended for the installation of a 24 V system:

Cable	Cross section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm	45 m
NYM / NYIF	1.50 mm ²	136 m

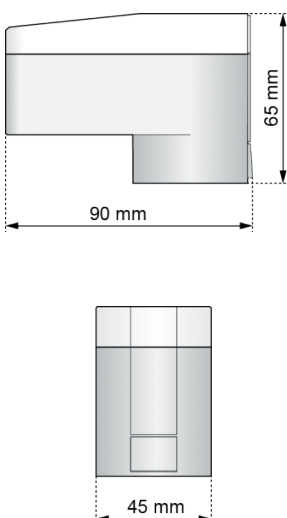
Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

Rule of thumb: $P_{\text{Transformer}} = n \times 3 \text{ W}$
n ... Number of actuators

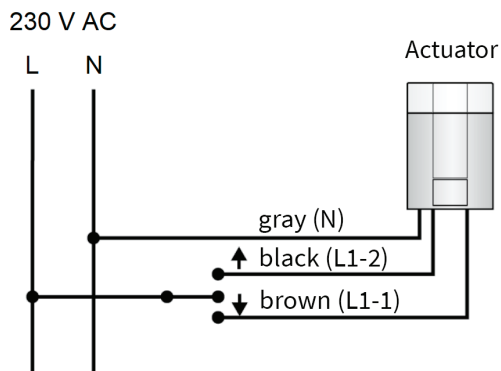
5.2.3 Electromotive actuator 230 V, 3-point

Technical data

Dimensions	Specifications	
	Operating voltage	230 V AC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.4 W (2.6 VA)
	Mode of operation	3-point
	Regulating time	15 s/mm
	Actuation distance	8.5 mm
	Actuating force	125 N -20/+40 %
	Ambient temperature	0 – 50 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
	Connection line	White, 1 m, 3 x 0.75 mm ² PVC
	Weight, (incl. cable)	200 g
	Article number	MN80597.076

Electrical connection

The actuator is controlled via a control unit with a 3-point control output (e.g. room temperature controller) or a building management system (BMS).



Led by:

The following cable lengths are recommended for the installation of a 230 V system:

Sheathed cable:	NYM 1.50 mm ²
Flat-webbed wire:	NYIF 1.50 mm ²

Nexus Valve

Vivax G2 EQM / Vivax EQM

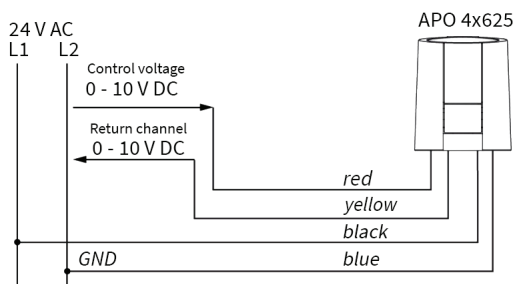
5.3 Actuator for NexusValve Vivax EQM (DN25 - DN32)

Thermoelectric actuator 24 V AC operating voltage, programmed

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.2 W
	Control voltage	0-10 V DC (reverse polarity protected)
	Mean regulating time	30 s/mm
	Actuation distance	6.5 mm (minus 0.5 mm over-travel)
	Actuating force	125 N + 5%
	Ambient temperature	0 – 60 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
	Connection line	White, 1 m, 4 x 0.22 mm ² PVC
	Weight, (incl. cable)	111 g
	Article number	MN80597.077

Electrical connection:



Led by:

The following cable lengths are recommended for the installation of a 24 V system:

Cable	Cross-section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm ²	45 m
NYM / NYIF	1.50 mm ²	136 m

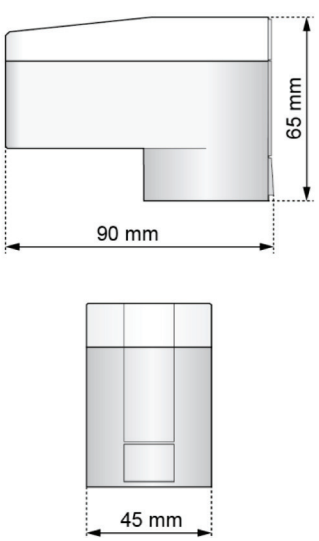
Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 (for AC version) or a switched-mode power supply according to EN 61558-2-16 (for DC version) must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

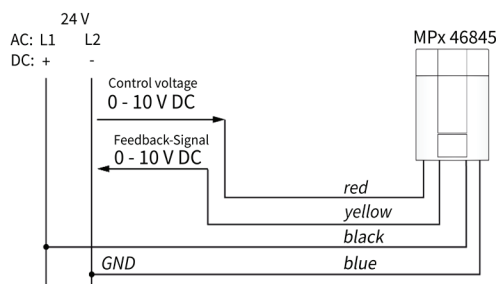
Rule of thumb: $P_{\text{Transformer}} = n \times 6 \text{ W}$
n... Number of actuators

Electromotive actuator 24 V AC operating voltage, programmed

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC/DC, 50 – 60 Hz
	Starting position	Currentless closed (NC)
	Power consumption	1.4 W (2.6 VA)
	Controller	3-point
	Regulating time	30 s/mm
	Actuation distance	6.5 mm
	Actuating force	150 N -20/+40 %
	Ambient temperature	0 – 50 °C
	CE conformity according to	EN 60730
	Protection code	IP 54
Connection line	White, 1 m, 4 x 0.22 mm ² PVC	
Weight, (incl. cable)	155 g	
Article number	MN80597.078	

Electrical connection:



Led by:

The following cable lengths are recommended for the installation of a 24 V system:

Cable	Cross-section Diameter	Length
DDC cable	0.22 mm ²	20 m
J-Y (ST) Y	0.80 mm ²	45 m
NYM / NYIF	1.50 mm ²	136 m

Transformer/power supply unit:

A safety transformer according to EN 61558-2-6 or a switched-mode power supply according to EN 61558-2-16 must always be used. The dimensioning of the safety transformer or the switching power supply results from the actuators' switch-on power:

Rule of thumb: $P_{\text{Transformer}} = n \times 6 \text{ W}$
n... Number of actuators

Nexus Valve

Vivax G2 EQM / Vivax EQM

5.4 Actuator for NexusValve Vivax EQM (DN40-50)

Technical data

Dimensions	Specifications	
	Operating voltage	24 V AC
	Power consumption	3.6 VA
	Control voltage	0 - 10 V DC
	Stroke duration	11.5 s/mm
	Actuator force	300 N
	Ambient temperature	
	Operation	-5 - 55°C
	Storage	-25 - 65°C
	CE conformity according to	EN 60730-1
	Protection code	IP 43
Connection line	1.5 m long, 5-wire	
Weight, (incl. cable)	250 g	
Article number	MN80597.079	

Electrical connection

	Connection open/closed
	0-10 V connection

DIP-switch positions

DIP	1	2	3	4	5	6
ON	indirect control direction	2-10 / 6-10	EQM	for DN50	4-20mA Electrical current signal	recognize stroke
OFF	direct control direction	0-10 / 0-5	no EQM	for DN40	range voltage signal	keep stroke

Pre-setting

	1	2	3	4	5	6
ON						
OFF						

6. Instructions for decommissioning, disassembly, environmental protection and disposal of electrical and electronic equipment

During disassembly, the respective safety instructions and residual dangers must be observed!

Disassembly and disposal:

Disassembly and disposal of the unit should only be carried out by suitable specialists.

When disposing of the auxiliary and operating materials, always observe the specifications in the safety data sheets, which must be provided by the suppliers of the auxiliary and operating materials.

No environmental damage may be caused during disposal.

If the unit is intended for scrapping, please ensure that the individual components are of the correct type when disposing of them (purity of type). Check which way the materials can be recycled properly.

Information according to the ElektroG - German Electrical and Electronic Equipment Act (ElektroG)*:



Disposal of electrical and electronic equipment

The symbol of the crossed-out dustbin means that you are legally obliged to dispose these devices separately from unsorted municipal waste. Disposal via household waste, such as the residual waste bin or the yellow bin, is prohibited. Avoid misdirected waste by disposing it correctly at special collection and return points.



Waste prevention measures always take precedence over waste management measures. In the case of electrical and electronic equipment, waste prevention measures include, in particular, extending the service life of defective equipment by repairing it and selling used equipment still in good working order instead of sending it for disposal.

*Please observe the current valid country-specific national implementation of the European WEEE Directive 2012/19/EU on waste electrical and electronic equipment.

Options for the return of old appliances

Owners of electrical and electronic waste (WEEE) can return it free of charge to the public waste management authorities that have set up available facilities for the return or collection of WEEE. In addition, the return is also possible with distributors under certain conditions.

The take-back by the distributor has to be free of charge with the purchase of a similar new appliance (1:1 take-back) at the same time. In addition, it is possible to return old appliances to the distributor free of charge if the external dimensions do not exceed 25cm and the return is limited to three old appliances per type of appliance (0:1 take-back).

Retail sector: Distributors with a sales area for electrical and electronic equipment of at least 400m² are obliged to take back electrical and electronic waste (WEEE). In addition, food retailers with a total sales area of at least 800m² who also offer/make available electrical and electronic equipment on the market several times a calendar year or on a permanent basis are obliged to take it back.

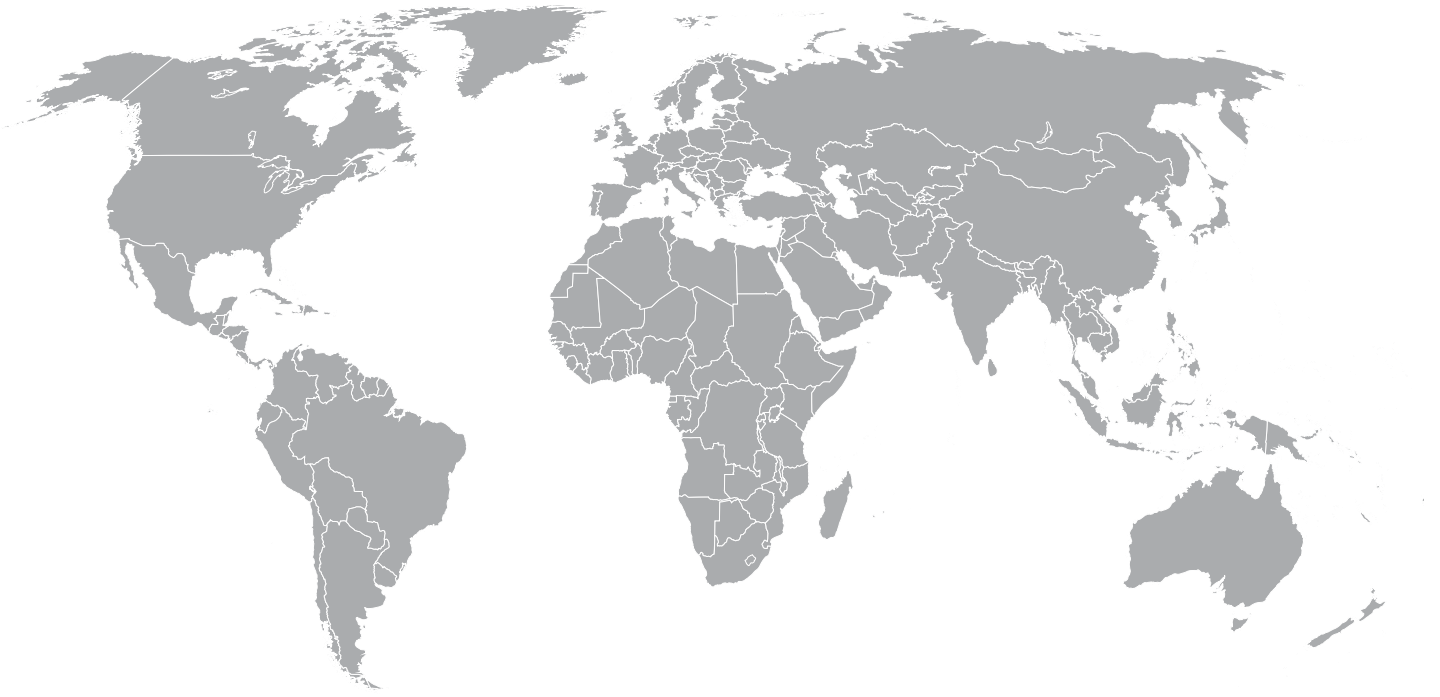
Remote market: Distributors who sell their products using means of distance communication are obliged to take back electrical and electronic waste (WEEE) if the storage and dispatch areas for electrical and electronic equipment are at least 400m².

Removing batteries and lamps

If the products contain batteries/rechargeable batteries or lamps that can be removed from the old appliance without destroying it, they need to be removed. Dispose these batteries or lamps separately.

Data protection

We would like to point out to all end users of electrical and electronical waste that you are responsible for deleting personal data on the old appliances that will be disposed.



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