

## AXT 111: Thermal drive for unit valves, with stroke indicator

For controllers with switched output (2-point). Used in conjunction with individual-room control systems (TSO, NRT, RDT, *ecos*, *ecolor*) for activating valves of the VUL, BUL and VXL, BXL series. Suitable for use with adaptors to upgrade existing systems. Position indicator in the drive's housing. Pure white housing (as per RAL 9010) of fire-retardant plastic. Can be changed from 'normally closed' to 'normally open' by removing a special piece. Fitted to valve with thread M30×1.5. Fitting position: vertical to horizontal. White power cable of Ø 0.5 mm<sup>2</sup> or 0.75 mm<sup>2</sup>, fixed to the housing. Standard version has 1.2 m of cable.

Type	Running time <sup>1)</sup> [min]	Max. stroke [mm]	Spring pressure [N]	Normally	Power	Weight [kg]
<b>AXT 111 F200</b>	3	4.5	125	closed (open)	230 V~	0.2
<b>AXT 111 F201</b>	3	4.5	125	closed (open)	110 V~	0.2
<b>AXT 111 F202</b>	3	4.5	125	closed (open)	24 V~/=	0.2
Actuator with bayonet connection						
<b>AXT 111 F500</b>	3	4.5	125	closed (open)	230 V~	0.2
<b>AXT 111 F502</b>	3	4.5	125	closed (open)	24V~/=	0.2
Drives with in-built auxiliary contacts <sup>3)</sup> and bayonet connection						
<b>AXT 111 F210</b>	3	4.5	125	closed	230 V~	0.2
<b>AXT 111 F212</b>	3	4.5	125	closed	24V~/=	0.2
Power supply	230 V~ ± 15%, 50...60 Hz			Degree of protection		IP 42 (EN 60529)
	110 V~ ± 10%, 50...60 Hz			when fitted vertically		IP 44
	24 V~/= ± 20%, 50...60 Hz			with auxiliary contacts		IP 44 (EN 60529)
Power consumption	<b>230 V</b>	<b>110 V</b>	<b>24 V</b>	Connection diagram		<a href="#">A08924</a>
in operation	2.5 W	3.0 W	3 W	with auxiliary contacts		<a href="#">A10006</a>
on starting	36 W	25 W	6 W	Dimension drawing	F20.	<a href="#">M08925</a>
start-up current	150 mA	220 mA	250 mA	with auxiliary contacts	F21.	<a href="#">M10083</a>
					F50.	<a href="#">M10414</a>
Max. operating temp.	100°C at valve			Fitting instructions	F20.	<a href="#">MV 505511</a>
Ambient temperature	-5...50 °C			with auxiliary contacts	F21.	<a href="#">MV 505822</a>
Ambient humidity	< 95 %rh				F50.	<a href="#">MV 505923</a>
				Declaration of materials		<a href="#">MD 55.012/55.012H</a>

### Variants

<b>AXT 111 F220</b>	As F200 (230 V~), but cable is 2 m and weight is 0.25 kg
<b>AXT 111 F222</b>	As F202 (24 V~), but cable is 2 m and weight is 0.25 kg
<b>AXT 111 F230</b>	As F200 (230 V~), but cable is 3m with Ø 0.75 mm <sup>2</sup> and weight is 0.38 kg
<b>AXT 111 F232</b>	As F202 (24 V~), but cable is 3 m and weight is 0.35 kg
<b>AXT 111 F240</b>	As F200 (230 V~), but cable is 4m with Ø 0.75 mm <sup>2</sup> and weight is 0.40 kg
<b>AXT 111 F242</b>	As F202 (24 V~), but cable is 4 m and weight is 0.38 kg
<b>AXT 111 F250</b>	As F200 (230 V~), but cable is 5m with Ø 0.75 mm <sup>2</sup> and weight is 0.45 kg
<b>AXT 111 F252</b>	As F202 (24 V~), but cable is 5 m and weight is 0.4 kg
<b>AXT 111 F270</b>	As F200 (230 V~), but cable is 7m with Ø 0.75 mm <sup>2</sup> and weight is 0.55 kg
<b>AXT 111 F272</b>	As F202 (24 V~), but cable is 7 m and weight is 0.5 kg
<b>AXT 111 F280</b>	As F200 (230 V~), but cable is 10mm with Ø 0.75 mm <sup>2</sup> and weight is 0.75 kg
<b>AXT 111 F282</b>	As F202 (24 V~), but cable is 10 m and weight is 0.7 kg
<b>AXT 111 F290</b>	As F200 (230 V~), but cable is 15m with Ø 0.75 mm <sup>2</sup> and weight is 0.95 kg
<b>AXT 111 F292</b>	As F202 (24 V~), but cable is 15 m and weight is 0.9 kg

### Accessories

<b>-FXV 006</b>	Electric distributor for control signals; see Section 55
<b>0371235 001</b>	Adaptor for fitting onto Oventrop valves, M30 × 1
<b>0371245 001</b>	Adaptor for fitting to <i>Danfoss</i> valves of type RA 2000 (e.g. RA-N, Ø 22 mm)
<b>0371356 001</b>	Adaptor for fitting to <i>Beulco</i> or <i>Tobler</i> underfloor-heating distributors
<b>0371357 001</b>	Adaptor for fitting to <i>Giacomini</i> valves of type R450, R452, R456 and 60 series
<b>0371359 001</b>	Adaptor for fitting to <i>Danfoss</i> valves of type RAVL (Ø 26 mm)
<b>0371360 001</b>	Adaptor for fitting to <i>Danfoss</i> valves of type RAV (Ø 34 mm)
<b>0371361 001</b>	Adaptor for fitting to <i>Herz</i> valves of type Herz-TS'90, M28 × 1.5
<b>0371363 001</b>	Adaptor for fitting to <i>Tour &amp; Andersson</i> valves of type TA
<b>0371916 001</b>	Adaptor for fitting to <i>Markaryd</i> valves (Swedish product)
<b>0371540 001*</b>	Protective housing <sup>2)</sup> , against vandalism and theft for VUL, VXL and BUL valves. Not for F210; F212 and not for VXL015F500; VXL020F500 and BXL valves; <a href="#">MV 505656</a>
<b>0371557 001*</b>	Auxiliary contacts; 5(2) A; 230 V; can be fitted later as per <a href="#">MV 505632</a> for the 'NC/NO' function; cut-in point 1.5 mm stroke ± 0.75 mm

<sup>1)</sup> Dimension drawing or wiring diagram are available under the same number

<sup>1)</sup> For 3 mm stroke when starting from cold

<sup>2)</sup> Also suitable for combinations with MNG or *Heimeier* valves or valves with a connection thread of M30 × 1.5

<sup>3)</sup> Auxiliary contacts 5(2) A, 230 V; cut-in point 1.5 mm, stroke ± 0.75 mm



T09128



Y07549



T10385



T10082



Y10020

**Operation**

The actuator has an electrically heated, overrun-proof expansion element which transfers its stroke direct to the valve. It works silently and requires no maintenance.

When the heating element is switched on from cold, the valve (after a warming-up time of about 1.3 minutes) starts to open and has performed 3 mm of stroke after approx. 1.7 minutes. The closing operation is symmetrical (with regard to time) to the opening operation: the expansion element cools down and the valve is closed by spring pressure. The drive's direction of operation can be changed by removing a special piece and then turning a screw.

'Normally closed' (factory setting):-

- Drive has power applied: valve with pushing plug (as types VUL, VXL, BUL), from closed to open.
- Drive has power applied: valve with hanging plug (as type BXL), from open to closed.

'Normally open' (piece removed):-

- Drive has power applied: valve with pushing plug (as type VUL, VXL, BUL), from open to closed.
- Drive has power applied: valve with hanging plug (as type BXL), from closed to open.

With a 'pulse-pause' clock signal, which effects a periodic open/close position, a quasi-continuous control system can be achieved with a cycle duration of 4 minutes. Permissible cycle duration: either < 4 min or > 12 min. Using the auxiliary contacts (which are available as an accessory and can be fitted later), a circulation pump or a heat counter, for instance, can be switched on.

The auxiliary contacts switch between 35% and 50% stroke. The rating for these auxiliary contacts is 3 A for ohmic load and 2 A for inductive load. The contacts close when the stroke reaches 35% or 50%.

**Engineering and fitting notes**

Before choosing the switching contacts and the mains fuses, the inrush current of the heating element should be taken into account. To ensure that the given running time can be achieved, the voltage loss in the electric cables should not exceed 10%.

The way to change from 'normally closed' to 'normally open' is described in [MV 505511](#). The position indicator shows which function has been set. When the red indicator is inserted in a black plastic piece, the 'normally closed' function is activated. When the red indicator is inserted in a white plastic piece, the 'normally open' setting is active.

On the 'normally closed' standard version, the valve can, in the event of a power failure, be opened by removing the drive. No tools should be used to fit the actuator to the valve: turning by hand is quite sufficient.

**Fitting outdoors.** If the devices are fitted outdoors, we recommend that additional measures be taken to protect them against the effects of the weather.

**Standards and regulations**

The actuator is tested to the requisite standards and complies with the relevant EU regulations.

**Additional technical data**

Rating of auxiliary switch when used with direct current: 4...30 V, 1...100 mA

**AXT 111 F200**

Complies with:-

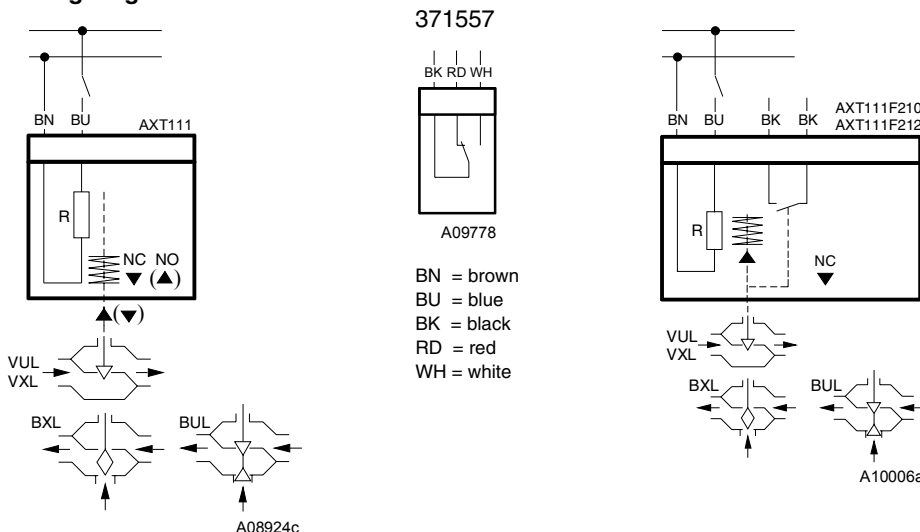
- Directive 73/23/EEC EN 60730-1/ EN 60730-2-14
- EMC directive 89/336/EEC EN 61000-6-1/ EN 61000-6-2
- EN 61000-6-3/ EN 61000-6-4

**AXT 111 F202**

Complies with:-

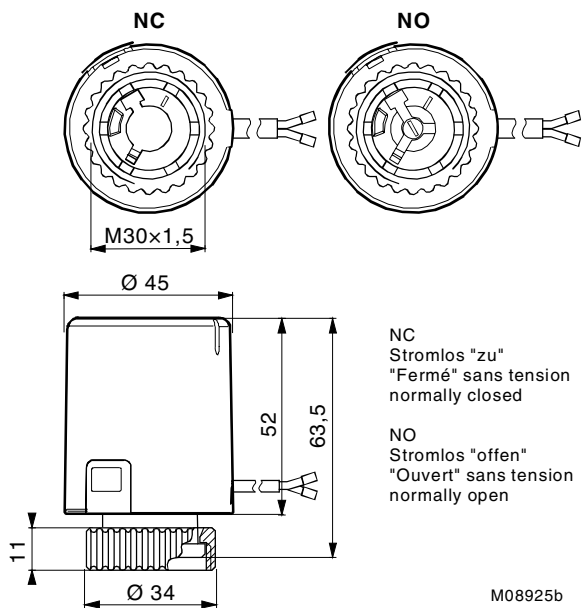
- EMC directive 89/336/EEC EN 61000-6-1/ EN 61000-6-2
- EN 61000-6-3/ EN 61000-6-4

**Wiring diagram**

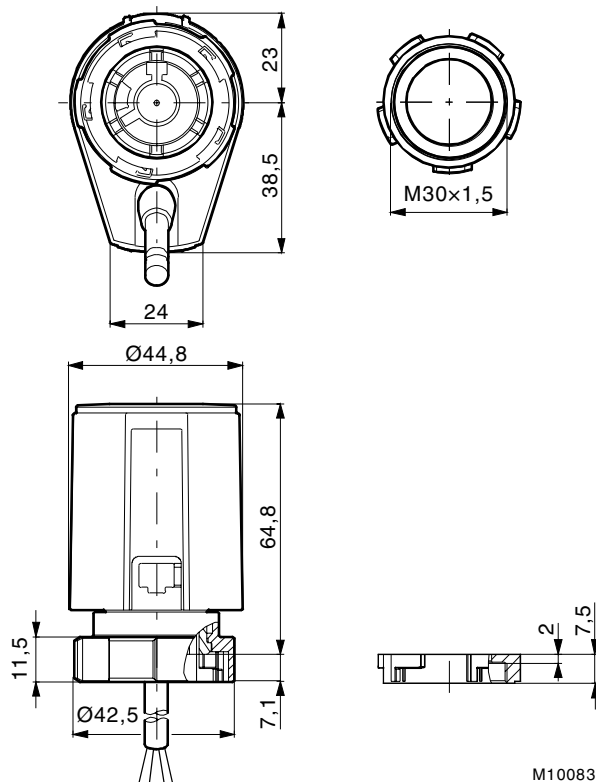


**Dimension drawing**

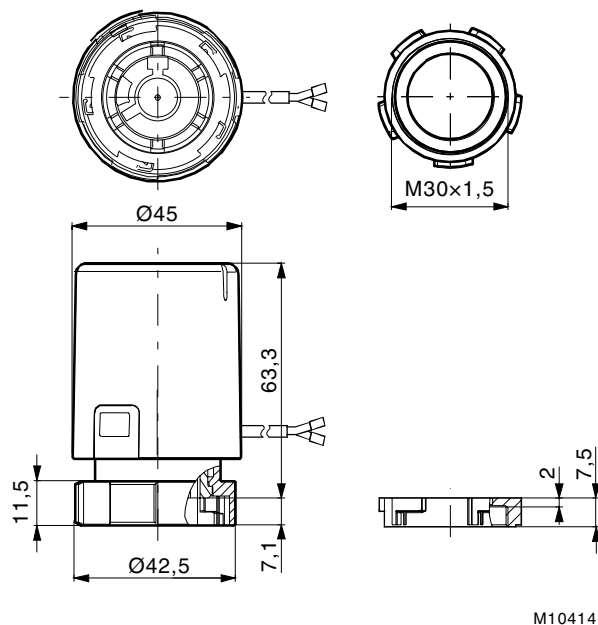
AXT 111 F20.



AXT 111 F21.

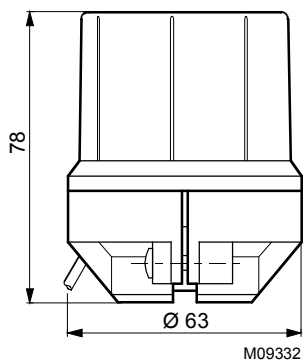


AXT 111 F50.

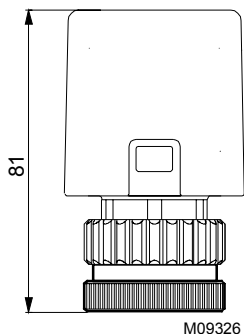


**Accessories**

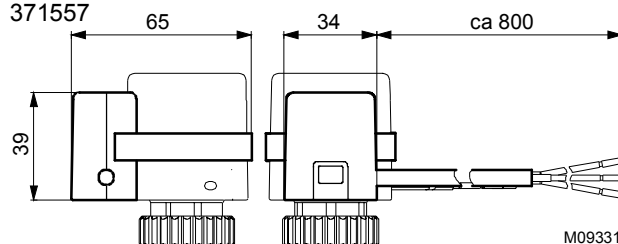
371540



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