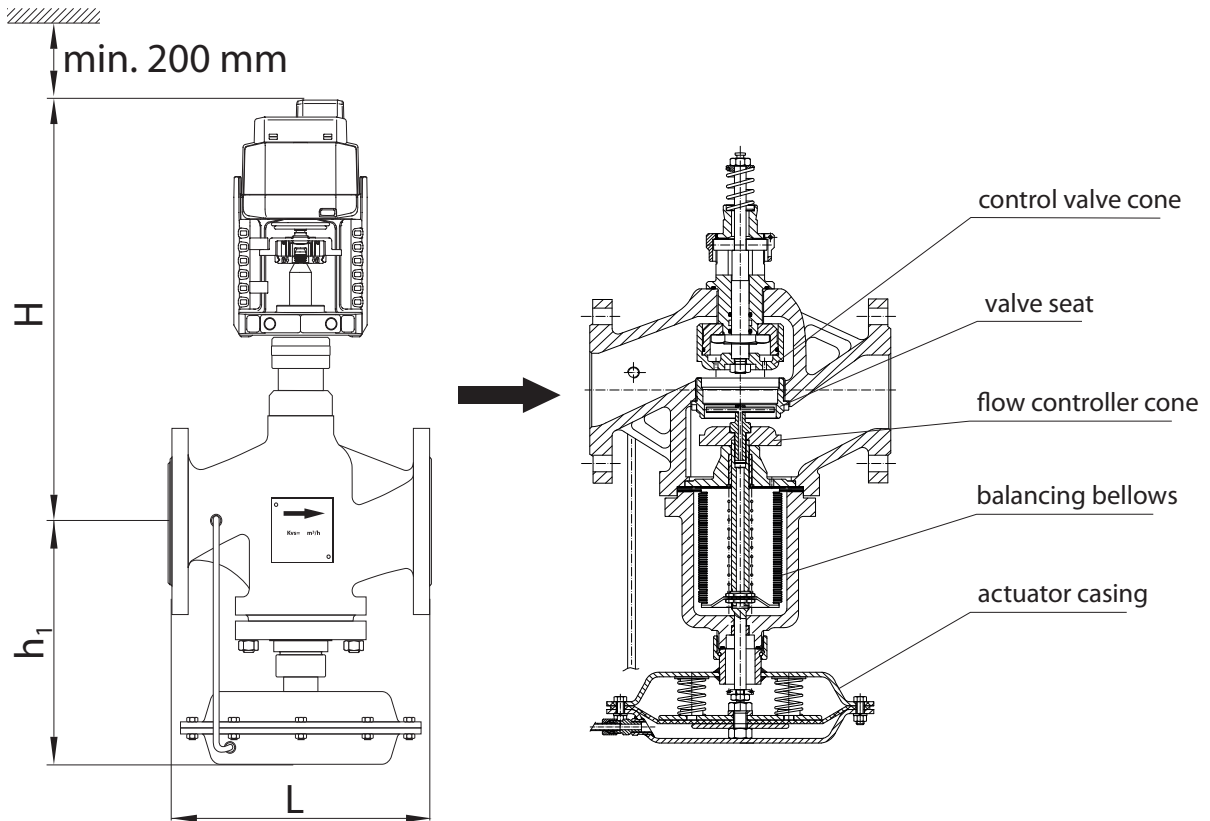


# HERZ-Flow Controller with Integrated Control Valve

Data sheet for flanged PIBCV PN16, Issue 0614

☑ Dimensions in mm



Order Nr.	DN	Stroke [mm]	kvs	min. Flowrate m <sup>3</sup> /h	max. Flowrate m <sup>3</sup> /h	Cavitation factor Z	H	h1	L	kg
F 4006 71	15	10	2,5	0,25	1,3	0,6	275	175	130	7
F 4006 72	15	10	4,0	0,4	2		275	175	130	7
F 4006 73	25	14	6,3	0,6	3	0,55	300	205	160	10
F 4006 93	25	14	8,0	0,8	4		300	205	160	10
F 4006 74	32	14	12,0	1,3	6,5		295	220	180	13
F 4006 75	40	14	20,0	2,6	11		320	225	200	15
F 4006 80	50	14	32,0	3,2	16	0,45	425	240	230	20
F 4006 81	65	16	50,0	6	28		435	355	290	44
F 4006 82	80	18	80,0	8	40	0,40	450	395	310	56
F 4006 83	100	21	125,0	12,6	63		455	435	350	73
F 4006 84	125	21	180,0	16	80		480	480	400	95

### Technical data

Max. operating pressure	16 bar
Max. differential pressure	10 bar
Diff. pressure across the restrictor	0,2 bar
Min. operating temperature	2 °C (pure water)
Min. operating temperature	- 20 °C (frost protection)
Max. operating temperature	130 °C
Type of connection	Flanged (EN 1092-2)
Valve body material	GG 25
Gasket material	FPM (ISO1629)
Cones, stem, seat material	WN1.4057, WN1.4404, WN1.4021
Impulse tupe	WN1.4301
Diaphragm material	EPDM

Water purity in accordance with the ÖNORM H 5195 and VDI 2035 standards.  
Ethylene and propylene glycol can be mixed to a ratio of 25 - 50 vol. [%].

### Description

Flow controller with integrated control valve - combi-valve, is primarily designed to control the flow of circulation water in district heating systems. The flow controller is operated by electric actuators F 7712 81 - 98 which are controlled by a microprocessor controller.

The limitation and flow regulation is realized by means of the pressure actuator with a diaphragm and integrated control valve. The control valve cone is controlled by the electric actuator and limited by the adjustable nut. Changing the position of the adjustable nut increases or decreases the maximum flow through the valve.

The pressure actuator with a diaphragm is connected to the valve flow port via a capillary. The pressure difference acts through the impulse tube on the control diaphragm and flow controller cone. Each pressure change on the valve upstream port, causes the movement of the control diaphragm and flow controller cone and causes increase or decrease of the valve orifice. Differential pressure across the valve is kept constant,  $\Delta p_w = 0,2 \text{ bar}$ .

Pressure drop across the valve:

$$\Delta p_v = \Delta p_w + (Q/K_{vs})^2$$

Maximal pressure drop across the valve:

$$\Delta p_{v_{\max}} = \Delta p_w + (Q_{\max}/K_{vs})^2$$

To ensure correct control function, minimal required differential pressure across the valve must be:

$$\Delta p_v = 0,5 \text{ bar.}$$

Q – fluid flow,  $Q_{\max}$  – max. fluid flow

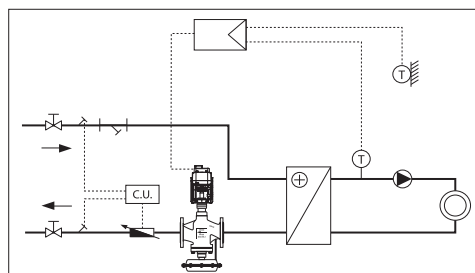
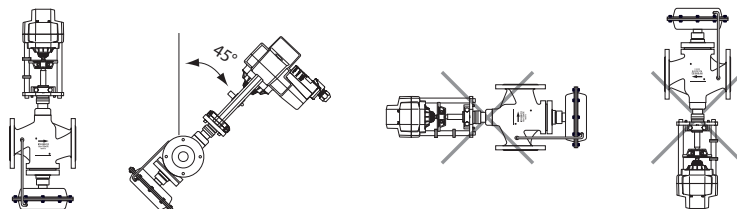
### Installation

Recommended installation: Install the valve in the return flow pipe of the system. Electric actuator should be placed in upward position, at  $\pm 45^\circ$  angle to the vertical pipe axis.

Permissible installation: The valve should be installed in horizontal supply flow pipes of the system.

The valves must be installed for the correct application using clean fittings. A HERZ strainer (4111) should be fitted to prevent impurities.

For installation, the local and international rules and standards have to be followed.

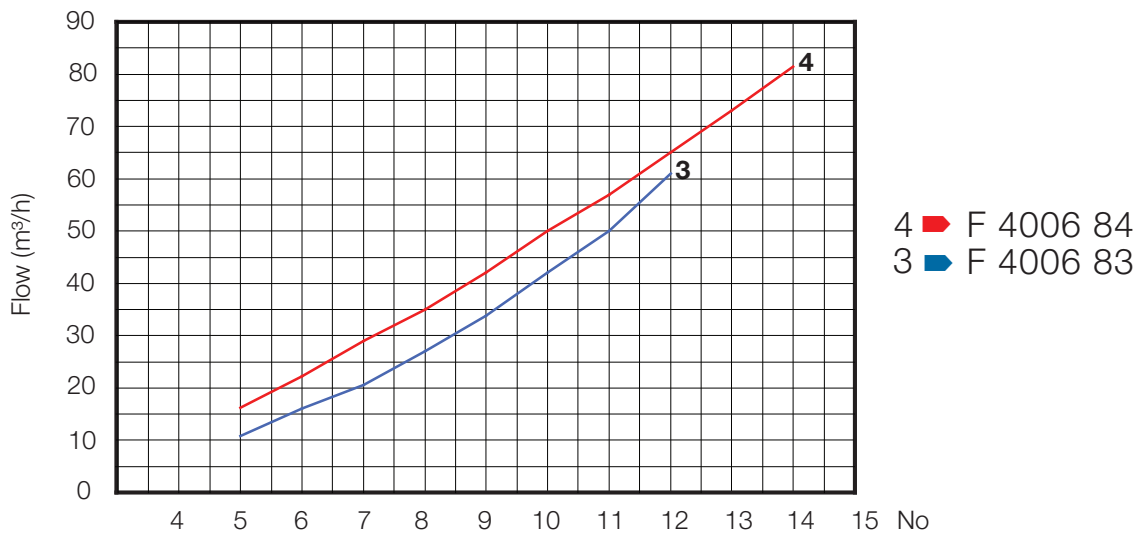
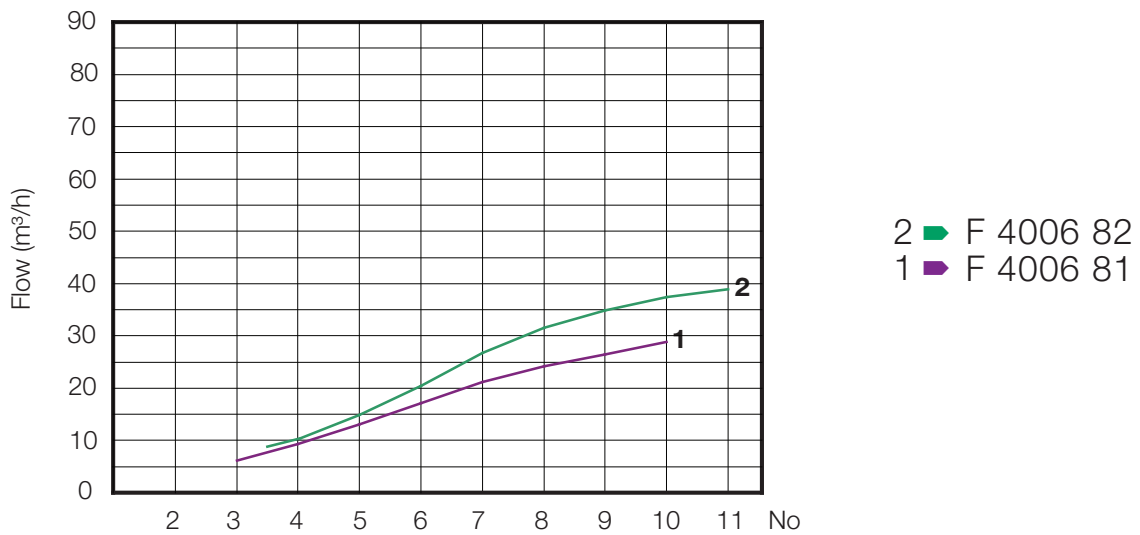
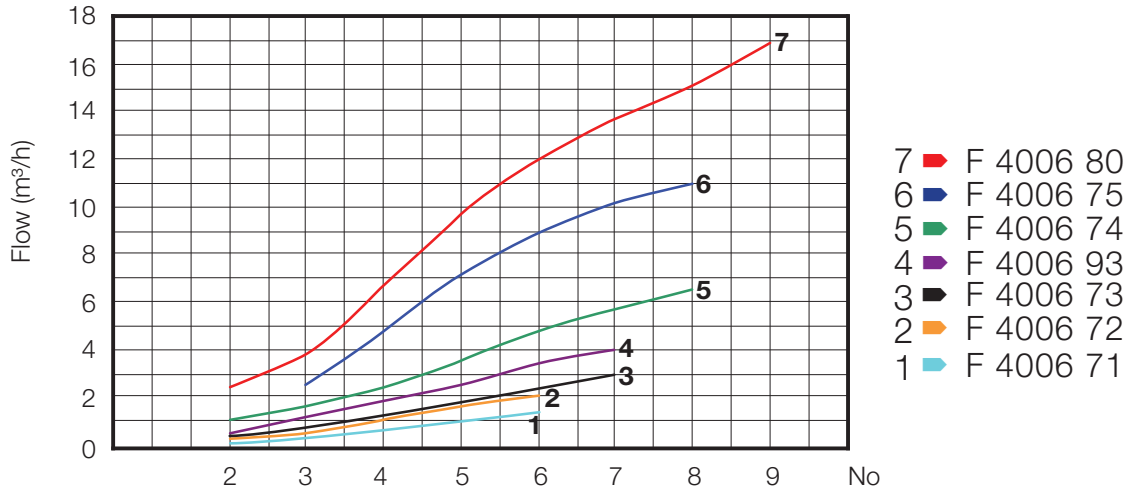


**☑ Flow adjustment**

The adjustment of the flow rate is carried out by limiting the valve stroke. The set point for the valve flow limitation can be adjusted by a flow meter or by using the diagrams with adjustment curves.

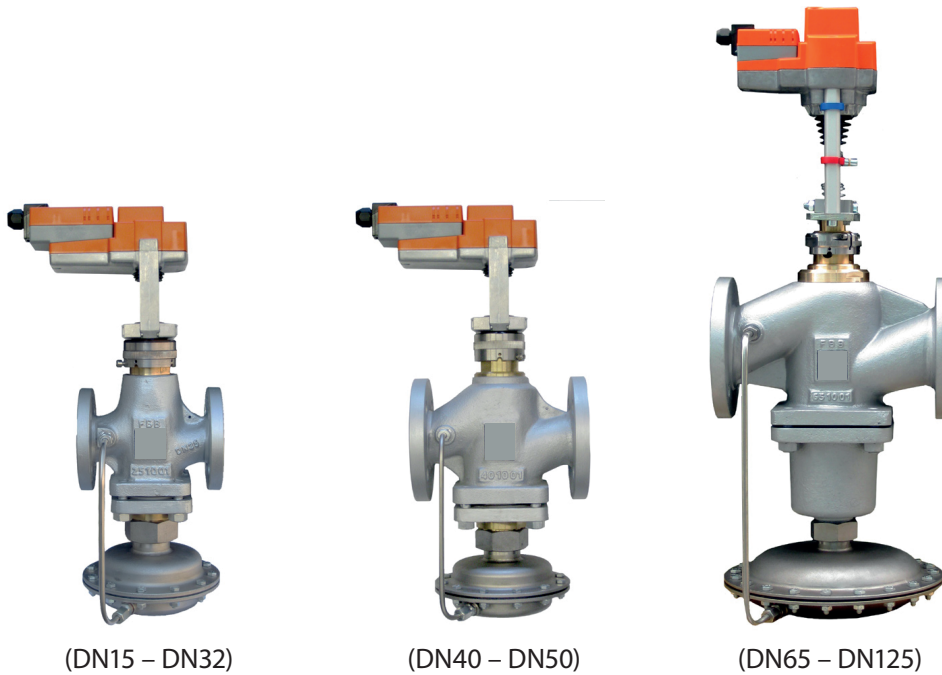
The set point for the flow limitation can be adjusted by turning the adjustable nut. X-axis values represent the numbers of full rotations of the adjustable nut from the lowest position on the valve neck (No).

Diagram values are approximate.



### ☑ Electric actuators

The flow controllers are used with three types of actuators. The flow controllers from DN15 to DN32 are used with the actuators type F 7712 90, F 7712 95 or F 7712 81, the controllers from DN40 to DN50 are used with the actuators type F 7712 91, F 7712 96 or F 7712 82 and the controllers from DN65 to DN125 with the actuators type F 7712 92, F 7712 98 or F 7712 84.



### ☑ Safety instructions and disposal

Control valves are in conformity with, PED-directive 97/23/EEC. Certificate reference no: CE 1837-PED-0099.

Prior to the assembly, maintenance and disassembly, the system must be depressurized, cooled down and emptied. Only authorized, trained and qualified personnel may perform activities of assembly, start-up, operation and disassembly of the equipment.

Before disposal the valve must be dismantled into groups of structural components and delivered to authorized waste recycling organizations in order to preserve the environment. Local legislations must be obeyed when disposing of the components.

### ☑ Actuator Selection

		F 7712 90 24V, mod	F 7712 91 24V, mod	F 7712 92 24V, mod	F 7712 95 24V, 3-pt	F 7712 96 24V, 3-pt	F 7712 98 24V, 3-pt	F 7712 81 230V, 3-pt	F 7712 82 230V, 3-pt	F 7712 84 230V, 3-pt
PIBCV	DN									
F 4006 71	15	✓			✓			✓		
F 4006 72	15	✓			✓			✓		
F 4006 73	25	✓			✓			✓		
F 4006 93	25	✓			✓			✓		
F 4006 74	32	✓			✓			✓		
F 4006 75	40		✓			✓			✓	
F 4006 80	50		✓			✓			✓	
F 4006 81	65			✓			✓			✓
F 4006 82	80			✓			✓			✓
F 4006 83	100			✓			✓			✓
F 4006 84	125			✓			✓			✓

**Please note:** all diagrams are indicative in nature and do not claim to be complete. All specifications and statements within this brochure are according to information available at the time of printing and meant for informational purpose only. Herz Armaturen reserves the right to modify and change products as well as its technical specifications and/or its functioning according to technological progress and requirements. It is understood that all images of Herz products are symbolic representations and therefore may visually differ from the actual product. Colours may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.