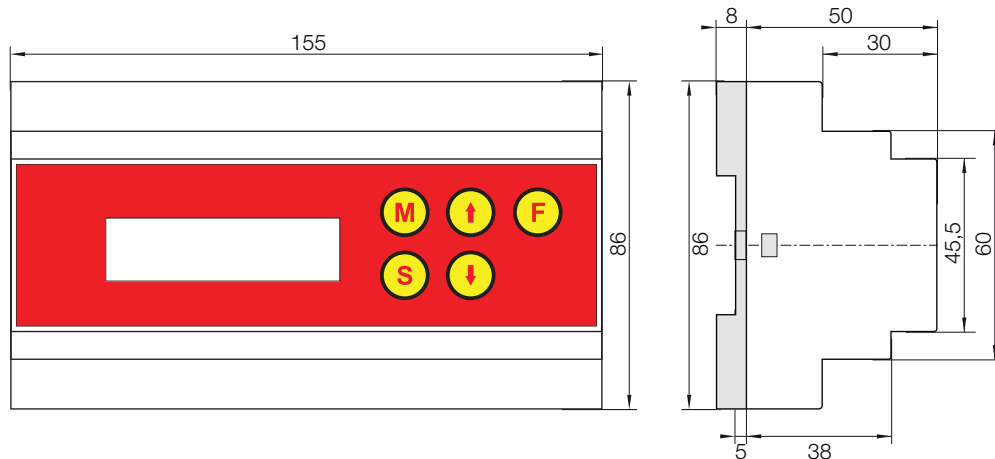


HERZ- Microprocessor Controller F-100

Data sheet for Microprocessor F 7793 7X, Issue 0317

☑ Dimensions in mm



☑ Description

The Herz microprocessor controller F-100 is designed for water temperature regulation in central heating systems at a given value or controls the flow temperature related to the outdoor temperature.

The controller is pre-programmed with software that supports up to two regulation heating circuits or one regulation heating circuit and one domestic hot water regulation circuit (DHW). Integrated real time clock enables the DHW preparation in a given time period with heating reduction or work in time sequences.

In case of a breakdown of supply power all working parameters are stored, and after regaining the power the automatic mode is resumed. The unit is equipped with a RS 485 communication interface which gives the possibility to export all given parameters, measured values and alarms, and possibility of connecting into SCADA system with MODBUS protocol. For installation, the local and international rules and standards have to be followed.



☑ Versions

F 7793 70	two circuit control
F 7793 71	one circuit control

☑ Technical data

Power supply	230 V AC, 50 Hz
Power consumption	4 W
Analogue inputs	4 Pt1000
Digital outputs	6 SSR, 230 V / 3 A
Digital inputs	2 potential free contacts
Communication	RS 485
Display	alpha numerical, 2 x 16 characters
Keyboard	5 function keys
Level of protection	IP 40
Dimension	155 x 86 x 58 mm
Installation	DIN rail 35 mm
Working temperature	0 - 70°C
Working humidity	max. 75%

☑ Features

- Built - in LCD alphanumeric display (2 rows of 16 characters) with backlighting,
- Easy operator guidance with 5 buttons called M , S , , F,
- 4 analogue inputs PT 1000 sensor,
- 4 digital outputs for motorized valve control,
- The application parameters are stored in the controller and are not affected by a power break,
- The enclosure is designed for mounting on DIN rail,
- Electrical connection with plug terminals for wires up to 2,5 mm².

☑ Controller 1 7790 71 operation

List of measured values

In succession press button M (1 CLICK) you can list measured values:

channel	measure value	unit
1	Outdoor temp.	°C
2	Desired temp. heating	°C
3	Flow temp. heating	°C

Diagnostic:

- If flow temp. sensor is short circuited then display is + + +;
- If flow temp. sensor is not connected then display is - - -.
- If outdoor sensor is short circuited then display is + + +;
- If outdoor sensor is not connected then display is - - -.

List of statuses

In succession press button F (1 CLICK) you can list statuses of motorised valves:

channel		status
1	Actuator	(OFF) (Closing) (Opening)

Press the M key or S to exit the menu.

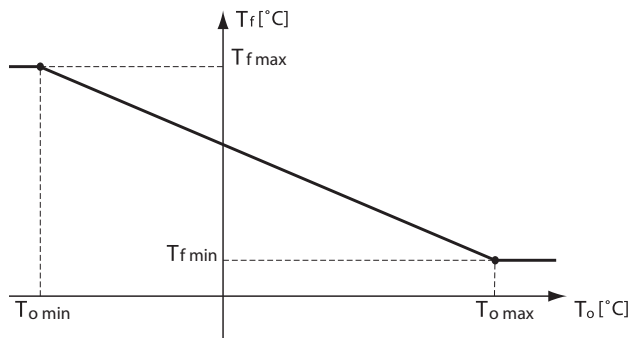
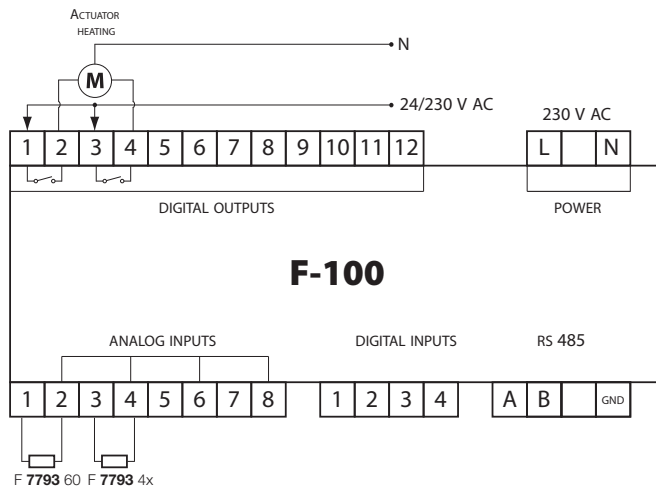
Viewing and setting parameters

Constant pressure on the S key and single pressing the M key (1 CLICK) provides an overview of the parameters:

Value of the selected parameter can be changed by holding down S and pressing the ↑ key for increase, or press ↓ for decrease value. Releasing the buttons with all the parameters are entered into memory that stores the set values.

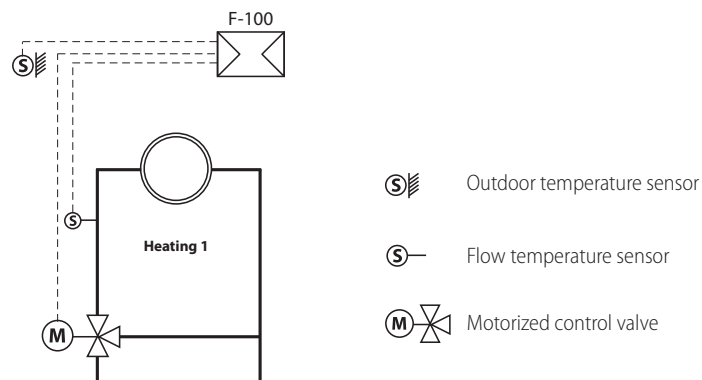
channel	parameter	factory settings	range
1	Max. flow temp. heating	90	(25 – 130) ° C
2	Min. outdoor temp. heating	-18	(-01 – -50) ° C
3	Min. flow temp. heating	40	(25 – 130) ° C
4	Max. outdoor temp. heating	12	(00 – 30) ° C
5	P - band	04	(01 – 15)
6	I - time	60	(10 – 240) sec
7	Correction outdoor temp.	0	(-5 – +5) ° C
8	Correction flow temp.	0	(-5 – +5) ° C

Wiring diagram



	parameter	channel
T_f max	Max. flow temp.	1
T_o min	Min. outdoor temp.	2
T_f min	Min. flow temp.	3
T_o max	Max. outdoor temp.	4

Application example



☑ Controller 1 7790 70 operation

List of measured values

In succession press button M (1 CLICK) you can list measured values:

channel	measure value	unit
1	Outdoor temp.	°C
2	Desired temp. heating 1	°C
3	Flow temp. heating 1	°C
4	Desired temp. heating 2	°C
5	Flow temp. heating 2	°C

Diagnostic:

- If flow temp. sensor is short circuited then display is + + +;
- If flow temp. sensor is not connected then display is - - -.
- If outdoor sensor is short circuited then display is + + +;
- If outdoor sensor is not connected then display is - - -.

List of statuses

In succession press button F (1 CLICK) you can list statuses of motorised valves:

channel		status
1	Actuator	(OFF) (Closing) (Opening)
2	Actuator	(OFF) (Closing) (Opening)

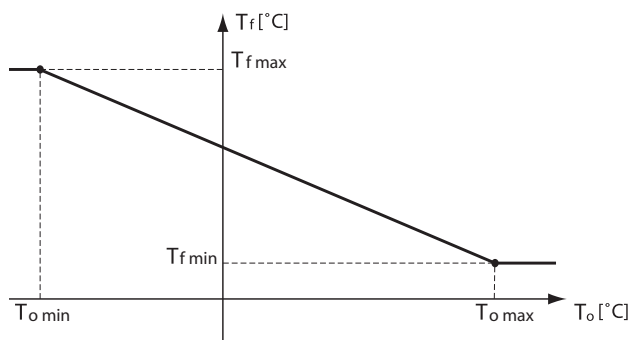
Press the M key or S to exit the menu.

Viewing and setting parameters

Constant pressure on the S key and single pressing the M key (1 CLICK) provides an overview of the parameters:

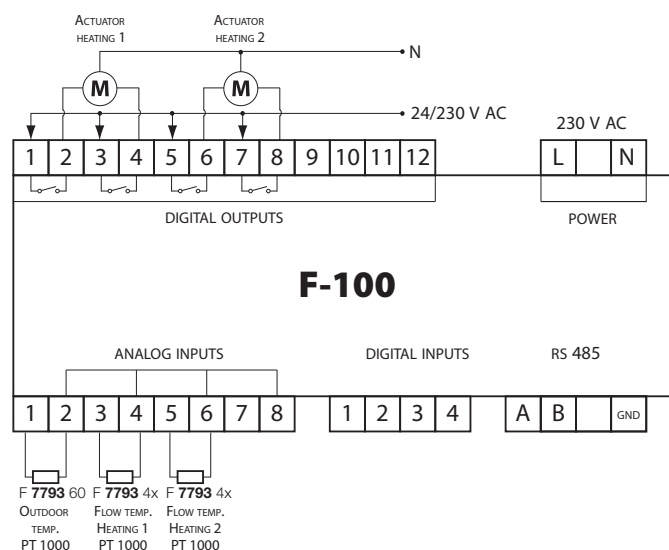
Value of the selected parameter can be changed by holding down S and pressing the **↑** key for increase, or press **↓** for decrease value. Releasing the buttons with all the parameters are entered into memory that stores the seted values.

channel	parameter	factory settings	range
1	Max. flow temp. Heating 1	90	(25 – 130) ° C
2	Min. outdoor temp. Heating 1	-18	(-01 – -50) ° C
3	Min. flow temp. Heating 1	40	(25 – 130) ° C
4	Max. outdoor temp. Heating 1	12	(00 – 30) ° C
5	Max. flow temp. Heating 2	90	(25 – 130) ° C
6	Min. outdoor temp. Heating 2	-18	(-01 – -50) ° C
7	Min. flow temp. Heating 2	40	(25 – 130) ° C
8	Max. outdoor temp. Heating 2	12	(00 – 30) ° C
9	P - band	04	(01 – 15)
10	I - time	60	(10 – 240) sec
11	Correction outdoor temp.	0	(-5 – +5) ° C
12	Correction flow temp. 1	0	(-5 – +5) ° C
13	Correction flow temp. 2	0	(-5 – +5) ° C

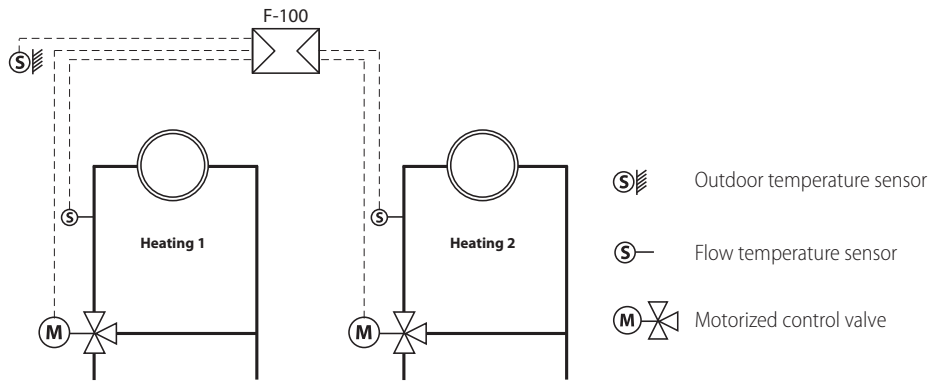


	parameter	channel
$T_{f \text{ max}}$	Max. flow temp.	1; 5
$T_{o \text{ min}}$	Min. outdoor temp.	2; 6
$T_{f \text{ min}}$	Min. flow temp.	3; 7
$T_{o \text{ max}}$	Max. outdoor temp.	4; 8

Wiring diagram



 Application example



Shock Hazard When servicing make sure that: The electrical supply to the controller is switched off to avoid possible damage to the equipment, personal injury or shock. You do not touch or attempt to connect or disconnect wires.



Before disposal the controller 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.

Please note: all schemes are indicative in nature and do not claim to be complete. All specifications and statements within this document 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. Colors may differ due to printing technology used. In case of any further questions don't hesitate to contact your closest HERZ Branch-office.