

R460H



Energy
Management

Thermostatic head with threaded connection M30 x 1,5 mm

Datasheet
0170EN 01/2023



To use heating energy only where and when it is actually needed, the most simple, cheap and reliable independent thermoregulation solution is to equip each radiator in the building with valves with thermostatic option and thermostatic heads.

Thermostatic heads serve to keep constant the ambient temperature of the room in which they are present, according to the set value.

The R460H thermostatic head is equipped with liquid sensor and connection to the valve body with threaded ring nut M30 x 1,5 mm.

Versions and product codes

PRODUCT CODE	CONNECTION
R460HX011	Threaded ring nut M30 x 1,5 mm

Operation



The temperature variation of the environment causes a consequent variation in the volume of the liquid contained in the sensor inside the head.


This volume change causes the movement of an internal mechanism with the consequent closing or opening of the valve and therefore with modulation of the flow of water that enters the heating element.

When the temperature in the room is approaching the required value, the head gradually closes the valve, letting through just the minimum amount of water needed to keep the room temperature constant; this means guaranteed energy savings.

➤ Technical data


R460H in combination with H series valves with thermostatic option

- Temperature range in combination with the valve bodies: 5÷110 °C
- Storage temperature range: -20÷55 °C
- Max. working pressure in combination with the valve bodies: 10 bar
- Max. differential pressure in the valve: 1,4 bar (1/2"); 0,7 bar (3/4")
- Min. head regulation: 8 °C in position 
- Max. head regulation: 30 °C in position 



 **NOTE.** The declared values refer to the installation condition of the thermostatic head on the Giacomini valve bodies of the H series.


VALVE SIZE	NOMINAL FLOW RATE q_{mNH} [kg/h]	AUTHORITY "α" OF THE STOPPER
1/2" (R401H, R402H, R403H)	170	0,87
1/2" (R415H)	150	0,90
3/4" (R401H, R402H)	240	0,88

KEYMARK (EN215) certification, in combination with H series valves

PRODUCT CODE	DECLARED HYSTERESIS C_H	INFLUENCE OF THE DECLARED WATER TEMPERATURE W_H	DECLARED RESPONSE TIME Z_H	INFLUENCE OF THE DECLARED DIFFERENTIAL PRESSURE D_H	CONTROL ACCURACY CA_H	COMPLIES WITH DIRECTIVE RT2012 CERTITÀ CON VARIATION TEMPORELLE		TELL	
						FACTOR VT	VALUE VT_H	ENERGY EFFICIENCY CLASS	CLASSIFICATION
R460HX011	0,35 K	0,9 K	26 min.	0,4 K	0,6 K	0,56	0,6	0,5	


R460H in combination with HDB series valves with thermostatic option

- Temperature range in combination with the valve bodies: 5÷95 °C
- Storage temperature range: -20÷55 °C
- Max. working pressure in combination with the valve bodies: 10 bar
- Max. differential pressure in the valve: 0,6 bar
- Min. head regulation: 8 °C in position 
- Max. head regulation: 30 °C in position 

 **NOTE.** The declared values refer to the installation condition of the thermostatic head on the Giacomini valve bodies of the HDB series.

VALVE SIZE	PRESETTING POSITIONS	NOMINAL FLOW RATE q_{mNH} [kg/h]	AUTHORITY "α" OF THE STOPPER
3/8", 1/2", 3/4" (R401HDB, R402HDB, R415HDB)	6	83	0,52
	5	75	0,31
	4	60	0,27
	3	40	0,21
	2	18	0,19
	1	6	0,64

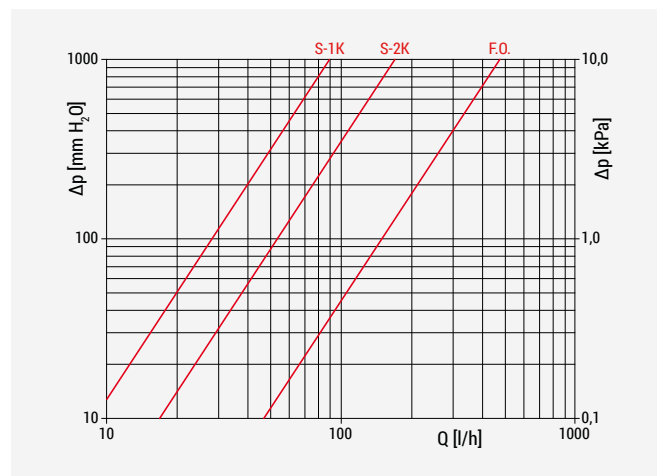
KEYMARK (EN215) certification, in combination with HDB series valves

PRODUCT CODE	DECLARED HYSTERESIS C_H	INFLUENCE OF THE DECLARED WATER TEMPERATURE W_H	DECLARED RESPONSE TIME Z_H	INFLUENCE OF THE DECLARED DIFFERENTIAL PRESSURE D_H	CONTROL ACCURACY CA_H	COMPLIES WITH DIRECTIVE RT2012 CERTITÀ CON VARIATION TEMPORELLE		TELL	
						FACTOR VT	VALUE VT_H	ENERGY EFFICIENCY CLASS	CLASSIFICATION
R460HX011	0,35 K	0,9 K	26 min.	0,4 K	0,6 K	0,56	0,6	0,5	

Hydraulic characteristics

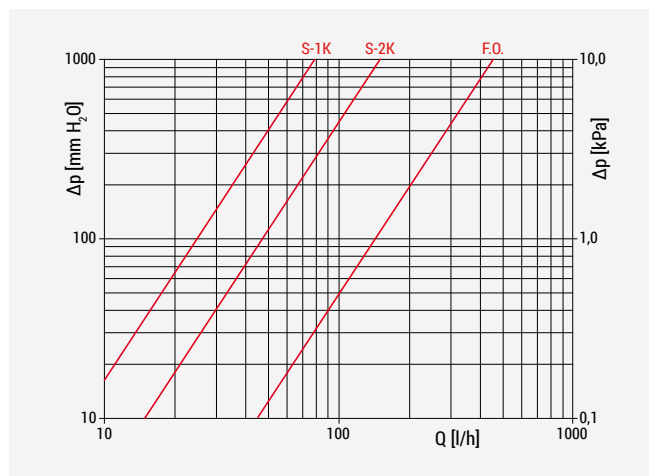
NOTE. The data shown are obtained according to the specifications of the EN215 Standard.

• R460H in combination with the valve bodies 1/2" (R401H, R402H, R403H)



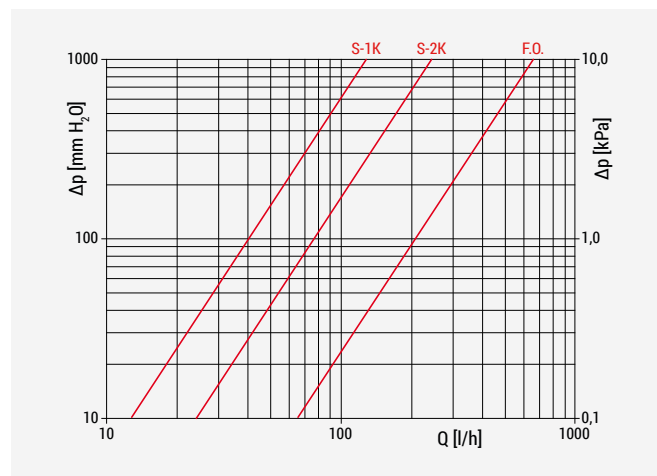
CURVE	S-1K	S-2K	F.O.
Kv	0,28	0,54	1,52

• R460H in combination with the valve bodies 1/2" (R415H)



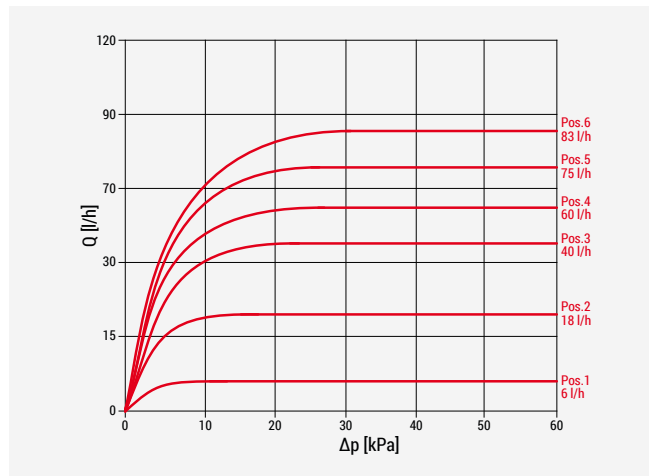
CURVE	S-1K	S-2K	F.O.
Kv	0,25	0,47	1,49

• R460H in combination with the valve bodies 3/4" (R401H, R402H)



CURVE	S-1K	S-2K	F.O.
Kv	0,40	0,76	2,15

• R460H in combination with valves bodies 3/8", 1/2", 3/4" (R401HDB, R402HDB, R4515HDB)

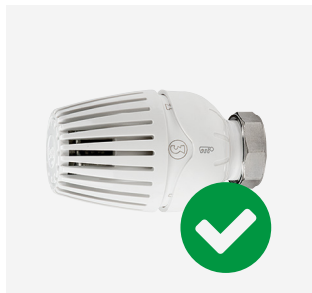


Presetting positions	1	2	3	4*	5	6
Flow rate with thermostatic head [l/h] (Percentage tolerance on the flow rate value)	6 (80%)	18 (70%)	40 (50%)	60 (30%)	75 (20%)	83 (10%)
Δp min [kPa]	20	20	20	20	20	20
Δp max [kPa]	60					

* Factory position.

➤ Installation and adjustment

Allowed installation positions



i In case it is mandatory to install the thermostatic head in vertical position, select a setting higher than the standard (see "Adjusting the temperature" table)

- It is preferred that thermostatic heads are installed in the horizontal position. For vertical installation, direct influence of the radiator on the thermostatic head sensor could affect the correct measuring of the room temperature.
- In order to prevent inaccurate temperature detections, thermostatic heads should not be installed in recesses, in curtain boxes or behind curtains, and should not be exposed to direct sunlight.

Installation on valves with thermostatic options

To install the thermostatic heads on the valve body, proceed as follows:



- 1)** Fully open the head by turning the handwheel to position ⚙.



- 2)** Insert the thermostatic head on the hexagon of the valve body and turn the ring nut to tighten it.



- 3)** The head is now installed to the valve and can be moved to the required adjustment position by turning the handwheel.

Removal of the thermostatic head

To remove the thermostatic heads from the valve body, proceed as follows:

- 1)** Fully open the head by turning the handwheel to position ⚙.
- 2)** Unscrew the threaded ring nut.
- 3)** Unhook the thermostatic head with a light strength.

Handwheel opening limit / locking

The handwheel limit and locking operations are carried out with the thermostatic head already installed on the valve body.



1) Turn the handwheel to position (3) and release it by pulling it forward.

⚠ WARNING. In order to prevent losses in calibration of the thermostatic head, never tamper with the position of the bulb.



2) Inside the handwheel there are two plastic limiters, to use them is necessary to extract them using a small screwdriver.

Using a single limiter it is possible to partly the opening or closing of the head.

Using both, it is possible to set the ends of the adjustment range, until the thermostatic head is locked in the desired adjustment position.

3a) A **partial** opening of the thermostatic head can be achieved by inserting the limiter into the cam (referring to the photos):



- on the right of the number corresponding to the maximum desired opening.

Example: fix the limiter to the right of the number 3. In this way, is possible to fully close the head, or open up to 3).



- on the left of the number corresponding to the minimum desired opening.

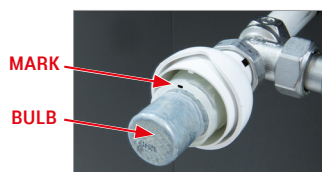
Example: fix the limiter to the right of the number 3. In this way, is possible to fully close the head, or open up to 3).



3b) In order to **lock** the adjustment range, position a limiter to the right of the number corresponding to the maximum desired opening and a limiter to the left of the number corresponding to the minimum desired opening. This prevents the head from being either opened or closed.

4) After the limiters have been positioned, return the handwheel to the initial adjustment position (3), applying sufficient pressure.

Ⓝ NOTE. On looking inside the head, near the bulb, a black mark should be visible. Check that this mark is always in line with the Keymark symbol on the head separator.



Adjusting the temperature

The correct adjustment position for thermostatic heads is obtained by referring to the following table, which matches the numbering on the handwheel to the corresponding room temperatures.

Thermostatic head position	*	1	2	3	4	⚙
Temperature adjusted [°C]	8	10	15	20	25	30

Ⓝ NOTE. The values shown in the table refer to the optimum conditions obtained in a climatic chamber. In the room itself, these values may be altered by factors such as the type of installation, the environmental conditions, the degree of insulation in the building, and the characteristics of the radiators.

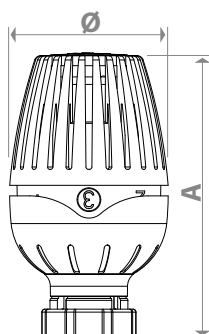
If the radiator is positioned where there is cold air or draughts, the calibration temperature will not correspond to the average room temperature because the head sensor is influenced by the local temperature and therefore commands the closure of the valve too early or not at all. In these cases, the handwheel must be repositioned with the aid of a mercury thermometer positioned in the middle of the room.

In example: if the head is in position 3 and the room temperature is lower than the 20 °C envisaged while the system is working, this means the valve has been prematurely closed due to local excess temperature. In this case, turn the handwheel slightly until it is halfway between number 3 and number 4. Vice versa, if the temperature is higher than the 20 °C when the head is in position 3, this means the it is positioned in a cold draught and therefore keeps the valve open. In this case, turn the handwheel until it is halfway between number 2 and number 3.

If the thermostatic head is installed in rooms that are not in use, you can ensure the best energy savings by turning the handwheel to position * (corresponding to the 8 °C anti-freeze protection temperature).

⚠ WARNING. To avoid excessive loads on the seal gasket of the thermostatic bonnet (with the resulting risk of jamming and locking) during the summer months, is recommended to place the handwheel in the fully open position, as marked by the symbol ⚙.

➤ Dimensions



PRODUCT CODE	A [mm]	Ø [mm]
R460HX011	96	54

➤ Product specifications

R460H

Thermostatic head with liquid sensor and connection to the valve body with threaded ring nut M30 x 1,5 mm. Adjustment positions from * to ⚙, corresponding to a temperature range of 8÷30 °C. Possibility to block or achieve partial opening and/or closure via the limiters supplied. Can be installed on all valves with thermostatic option, series H and HDB. Temperature range combined with valve bodies H series: 5÷110 °C. Temperature range combined with valve bodies HDB series: 5÷95 °C. Max. working pressure in combination with the valve bodies H and HDB series 10 bar. Energy efficiency class (TELL): I. KEYMARK (EN215) certification. Complies with Directive RT2012 - Certità (variation temporelle - temporal variation) factor VT 0,56.

⚠ **Safety Warning.** Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ **Package Disposal.** Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

ℹ **Additional information.** For more information, go to giacomini.com or contact our technical assistance service. This document provides only general indications. Giacomini S.p.A. may change at any time, without notice and for technical or commercial reasons, the items included herewith. The information included in this technical sheet do not exempt the user from strictly complying with the rules and good practice standards in force.

♻ **Product Disposal.** Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.