

R53SM, R53ST



Radiant
Systems



Energy
Management

Delivery modular manifolds with balancing lockshields

Datasheet
0117EN  03/2020



R53SM



R53ST

Delivery modular manifolds R53SM and R53ST with quick connection, equipped with balancing lockshield with mechanical memory, suitable for HVAC systems.

The quick connection allows the extremely fast creation of manifolds (without the need for tools or interposed sealing elements) with a high flow rate and multiple outlets on the basis of the worksite requirements.

The use of modular manifolds also means that warehouse stock can be limited to just two components: R53SM intermediate module and R53ST pair of end modules.

Versions and product codes

SERIES	PRODUCT CODE	CONNECTIONS
R53SM Intermediate module	R53SMY006	DN32 x B.18
	R53SMY106	DN32 x 3/4"E
R53ST Pair of end modules	R53STY006	G 1" x DN32 x B.18
	R53STY106	G 1" x DN32 x 3/4"E
	R53STY007	G 1-1/4" x DN32 x B.18
	R53STY107	G 1-1/4" x DN32 x 3/4"E

Optionals

- R178, R179, R179AM: B.18 adaptors for copper, plastic or multilayer pipes
- R178E, R179E: 3/4"E adaptors for copper, plastic or multilayer pipes

➤ Main features

The R53SM e R53ST modules with quick connection are made via the hot moulding method that produces smaller dimensions and thicknesses with notable transit sections for the fluids and hence limited pressure loss and flow noise.

The flow rate is regulated by means of a micrometric lockshield with mechanical memory, that can intercept the flow for maintenance purposes and then easily restore the initial operating conditions.

The modules are manually assembled and the hydraulic seal is guaranteed by the pre-assembled O-Rings.

The R53SM modules are connected to the other components (valves, cocks, pipes, etc.) by interposing the two R53ST end modules with female thread.

➤ Technical data

Performance

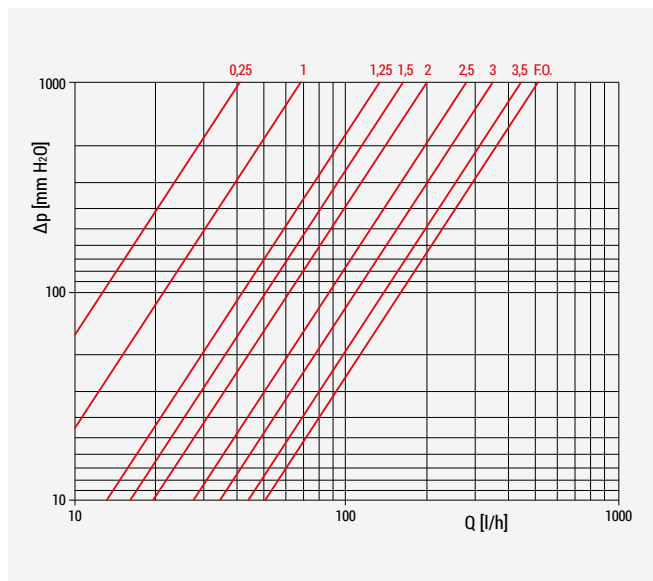
- Fluids: water, glycol solutions (max. 30 %)
- Temperature range: 5+110 °C
- Max. working pressure: 10 bar
- Center distance between the outlets of the assembled modules: 50 mm

Materials

- Body: brass UNI EN 12165 CW617N
- Gaskets: EPDM

Loss of pressure

The R53SM and R53ST modules with quick connection have no preferential water inlet direction. The loss of pressure indicated in the diagram refer to the single connection when the number of lockshield opening turns is varied.



No. LOCKSHIELD TURNS STARTING FROM FULLY CLOSED	Kv
0,25	0,13
1	0,18
1,25	0,22
1,5	0,42
2	0,63
2,5	0,89
3	1,10
3,5	1,39
F.O.	1,62

NOTE. The variation in water temperature and hence in its density implies pressure drop swings of about $\pm 1\%$ (for the same water flow rate); this figure is not significant for calculation purposes.

Installation



The R53SM modules with quick connection are manually assembled to create manifolds with the necessary number of outlets.

The operation is extremely simple and doesn't require any tools, but it's important to check that the end parts are clean and free of impurities, and to lightly lubricate the O-Ring with silicone grease if necessary.

To enable the quick connection of the individual modules, position them side by side with their vertical axes rotated by 90° in relation to each other. Push lightly in the axial direction until they reach their end stop, then rotate the two modules by 90° so that the male and female parts of the quick connection are in line with each other.

To assemble a distribution manifold is necessary a pair of R53ST end modules and the right number of R53SM intermediate modules for the number of outlets required. The modules assembled can be of different types (it is even possible to connect different manifold models), but they must necessarily have a nominal diameter of DN32.

NOTA. For example, to create a 5-outlets modular manifold, you will need a pair of R53ST end modules plus three R53SM intermediate modules.

For a manifold with just two outlets, the pair of R53ST end modules is enough.

The modules with quick connection are assembled with the other components thanks to the R53ST end modules with threads, available in the size 1" and 1-1/4".

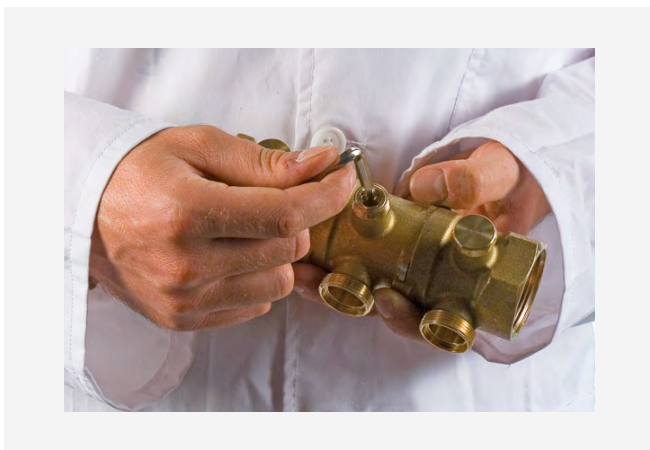
The grip with spanners (needed to tighten the male threads to the end modules) should be made using the special flat seats on the modules.

Do not apply a torsion or crushing strain on the modules, to avoid creating deformations that could make them unsuitable for assembly or prejudice the hydraulic seal.

After assembling the DN32 manifolds with the required number of outlets, they can be installed into the cabinets or on the wall.

Once the manifolds have been installed and the primary supply lines have been hooked up, it is possible to connect the circuits using suitable adaptors.

Regulation

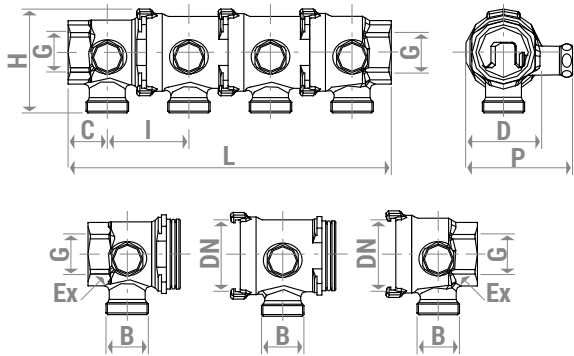


Known the flow rate that must pass through the circuits connected to the manifold, with circulator operating and any interceptions on the return manifold kept open, remove the protection cap on the front of the modules and then use the R558 key to completely loosen the mechanical memories and lockshields.

Starting from the fully closed position, tighten the lockshields of the modules until the required flow rate in the various circuits is reached. Once the regulation is complete, tighten the mechanical memories as far as they will go, then reassemble the protection caps.

NOTA. If you are unable to obtain the designed flow rates for all the circuits, make sure the circulator size is correct and the manifold receives the necessary flow rate and pressure.

Dimensions



R53ST+R53SM	G [INCH.]	B [mm]	EX [mm]	I [mm]	C [mm]	D [mm]	DN [mm]	H [mm]	P [mm]
1" x DN32	1"	B.18 3/4"E	39	50	24	48	32	64	66
1-1/4" x DN32	1-1/4"	B.18 3/4"E	48	50	27	48	32	64	66

	OUTLETS NUMBER OF ASSEMBLED MANIFOLD										
	2	3	4	5	6	7	8	9	10	11	12
N° DI R53ST	1	1	1	1	1	1	1	1	1	1	1
N° DI R53SM	0	1	2	3	4	5	6	7	8	9	10
L [mm] 1" x DN32	98	148	198	248	298	348	398	448	498	548	598
L [mm] 1-1/4" x DN32	104	154	204	254	304	354	404	454	504	554	604

Product specifications

R53SM

Delivery modular manifold with quick connection, made of brass, with balancing lockshield with mechanical memory, suitable for HVAC systems. Coupling centre distance 50 mm. Temperature range 5÷110 °C. Max. working pressure 10 bar. Available with connection for Base 18 or 3/4"E adaptors.

R53ST

Pair of delivery modular manifolds with quick connection, made of brass, with balancing lockshield with mechanical memory, suitable for HVAC systems. Coupling centre distance 50 mm. Temperature range 5÷110 °C. Max. working pressure 10 bar. Available with connection for Base 18 or 3/4"E adaptors.

⚠ 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.

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