

FRM Distributor Blocks – D Series, NPT

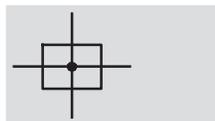
Technical Data

Function

Flow rate

1,300 ... 20,000 l/min

Standard



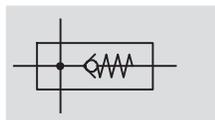
Temperature range

-10 ... +60 °C

Operating pressure

0 ... 16 bar

With integrated check valve



- Provides additional air connections for greater flexibility, i.e. for attachment of additional modules (pressure regulator, pressure switch, etc.)
- An optional integrated check valve prevents return flow of lubricated compressed air
- Can be used as an intermediate distributor for varying air qualities

General technical data								
Size	Mini			Midi			Maxi	
Pneumatic connection 1, 2 ¹⁾	1/8 NPT	1/4 NPT	3/8 NPT	3/8 NPT	1/2 NPT	3/4 NPT	3/4 NPT	1 NPT
Pneumatic connection 3	G3/4			G1/2			G3/4	
Pneumatic connection 4	G3/4							
Operating medium	Filtered compressed air							
Design	Branching module							
Type of mounting	Via accessories In-line installation							
Assembly position	Any							
Operating pressure [bar]								
Standard	0 ... 16							
With non-return function	0.15 ... 16			0.2 ... 16			0.25 ... 16	
With pressure switch	0 ... 12							

Note: This product conforms to ISO 1179-1 and ISO 228-1

Standard nominal flow rate ¹⁾ qnN [l/min]							
Port	Without port blocks	With port blocks					
		1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT
Mini							
Standard	3,300	1,500	3,300	3,300	-	-	-
With integrated check valve	2,000	1,300	2,000	2,100	-	-	-
With pressure switch	3,300	-	-	-	-	-	-
Midi							
Standard	8,200	-	-	7,000	8,200	8,800	-
With integrated check valve	5,600	-	-	5,500	5,600	5,500	-
With pressure switch	8,200	-	-	-	-	-	-
Maxi							
Standard	20,000	-	-	-	-	20,000	17,400
With integrated check valve	15,000	-	-	-	-	15,000	13,400
With pressure switch	20,000	-	-	-	-	-	-

1) Measured at p1 = 6 bar and Δp = 1 bar.

FRM Distributor Blocks – D Series, NPT

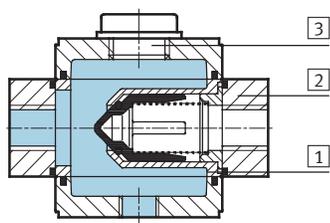
Technical Data

Ambient conditions		Mini	Midi	Maxi
Size				
Ambient temperature [°C]		-10 ... +60		
Temperature of medium [°C]		-10 ... +60		
Storage temperature [°C]		-10 ... +60		
Corrosion resistance class	CRC ²⁾	2		

Weights [g]							
Port	Without port blocks	With port blocks					
		1/8 NPT	1/4 NPT	3/8 NPT	1/2 NPT	3/4 NPT	1 NPT
Mini							
Without pressure switch	210	290	280	290	-	-	-
With pressure switch	590	-					
Midi							
Without pressure switch	520	-	770	760	740	710	-
With pressure switch	900	-					
Maxi							
Without pressure switch	900	-	-	-	1,160	1,120	1,230
With pressure switch	1,280	-					

Materials

Sectional view



Branching module		
1	Housing	Die-cast zinc
2	Port blocks	Die-cast zinc
3	Cover plate	Galvanized steel
-	Seals	Nitrile rubber, polyvinyl chloride
Note on materials		Free of copper, PTFE and silicone

2) Corrosion resistance class 2 according to Festo standard 940 070
 Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a normal industrial environment or media such as coolants or lubricating agents.

FRM Distributor Blocks – D Series, NPT

Technical Data – Dimensional Drawings



Dimensions Download CAD Data → www.festo.com/us/cad

Mini/Midi/Maxi

With port blocks

Without port blocks

4 Threaded pin (exchangeable) → Flow direction

Type	B1	B2	B3	B4	B5	D1	D2	D3	D6	H1	H2	L1	L2	T1	T2
Mini															
FRM-1/8-D-MINI (NPT)	64	52	40	30	-	1/8 NPT	-	M4	G1/4	20	11	42	7	7	-
FRM-1/4-D-MINI (NPT)						1/4 NPT									
FRM-3/8-D-MINI (NPT)						3/8 NPT									
FRM-D-MINI	-	-	40	30	5.8	-	11	M4	G1/4	-	-	42	7	-	10
Midi															
FRM-3/8-D-MIDI (NPT)	85	70	55	43	-	3/8 NPT	-	M5	G1/2	32	22	59	8	8	-
FRM-1/2-D-MIDI (NPT)						1/2 NPT									
FRM-3/4-D-MIDI (NPT)						3/4 NPT									
FRM-D-MIDI	-	-	-	-	6.8	-	24	-	-	-	-	-	-	-	11
Maxi															
FRM-3/4-D-MAXI (NPT)	96	80	66	46	-	3/4 NPT	-	M5	G3/4	32	22	70	8	8	-
FRM-1-D-MAXI (NPT)	116	91				40									
FRM-D-MAXI	-	-				-				6.8					

Note: This product conforms to ISO 1179-1 and ISO 228-1

Dimensions – Pressure Switch PEV

Mini/Midi/Maxi

Pressure switch PEV-1/4-B-0D with adjustable pressure switching point, plug, square design to DIN EN 175 301, type A

Type	B6	B7	L3
FRM-Y-D-MINI	20	62	92.3
FRM-Y-D-MIDI	27.5	69.5	92.3
FRM-Y-D-MAXI	33	75	92.3

FRM Distributor Blocks – D Series, NPT

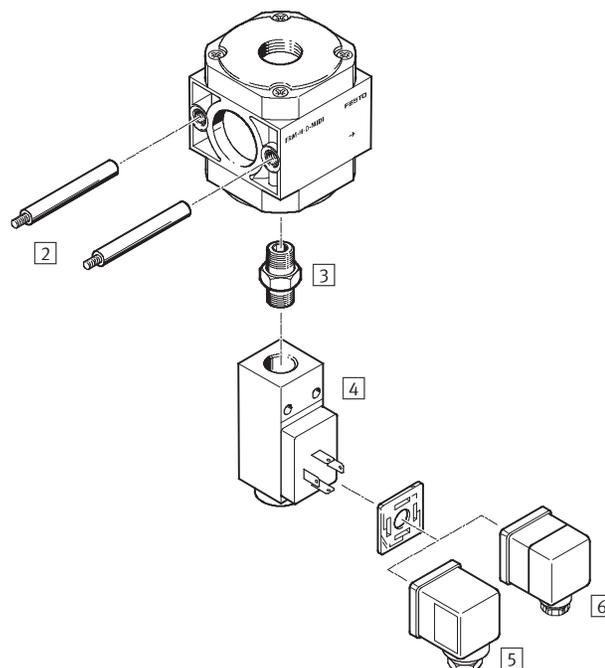
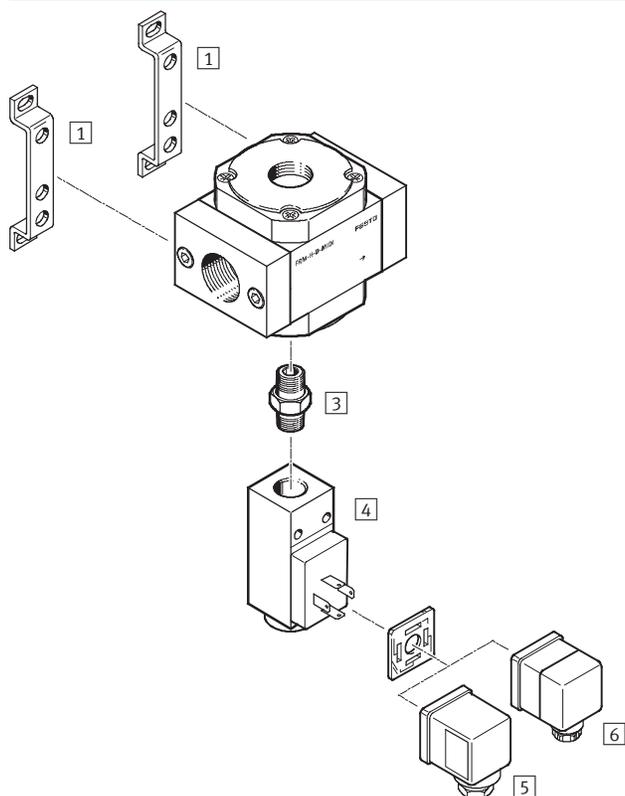
Accessories Overview



Mini/Midi/Maxi

Individual unit with port blocks

Individual unit without port blocks, for combination unit



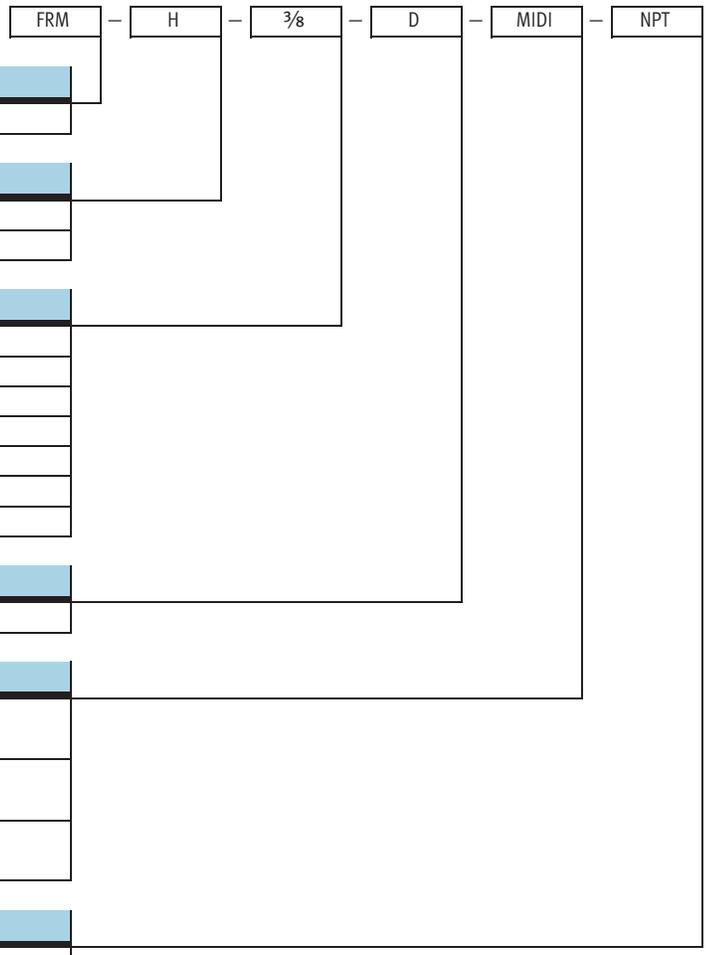
Mounting attachments and accessories					
	Individual unit		Combination		→ Page/Internet
	with port blocks	without port blocks	with port blocks	without port blocks	
1 Mounting bracket HFOE	■	–	■	–	hfoe
2 Threaded pin (included in scope of delivery) FRB	–	–	■	■	frb
3 Double nipple ESK	■	■	■	■	esk
4 Pressure switch PEV	■	■	■	■	pev
5 Plug socket MSSD-C	■	■	■	■	mssd
6 Angled plug socket PEV-...-WD-LED	■	■	■	■	pev

Note

For Custom Combinations → FAST Program Selector Guide starting page 7

FRM Distributor Block – D Series, NPT

Type Codes



Basic function	
FRM	Distributor block

Non-return function	
	Standard
H	With integrated check valve

Pneumatic Connection	
	Without port blocks
1/8	1/8 NPT Thread
1/4	1/4 NPT Thread
3/8	3/8 NPT Thread
1/2	1/2 NPT Thread
3/4	3/4 NPT Thread
1	1 NPT Thread

Series	
D	Series

Size	
MINI	Grid dimension 40 mm (without port blocks)
MIDI	Grid dimension 55 mm (without port blocks)
MAXI	Grid dimension 60 mm (without port blocks)

NPT Connection (where available)	
NPT	NPT threaded connection

FRM Distribution Blocks – D Series, NPT



Ordering Data

Ordering data – Without port blocks						
Size	Standard		With integrated non-return function		With pressure switch PEV-1/4-B-0D	
	Part No.	Type	Part No.	Type	Part No.	Type
Mini	170684	FRM-D-MINI	170687	FRM-H-D-MINI	542184	FRM-Y-D-MINI
Midi	170685	FRM-D-MIDI	170688	FRM-H-D-MIDI	542185	FRM-Y-D-MIDI
Maxi	170686	FRM-D-MAXI	170689	FRM-H-D-MAXI	542186	FRM-Y-D-MAXI

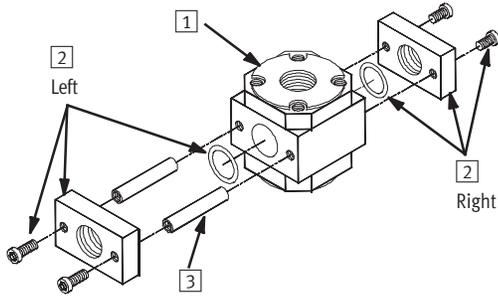
Ordering data – With port blocks						
Size	Connection	Standard		With integrated non-return function		
		Part No.	Type	Part No.	Type	
Mini	1/8 NPT	173924	FRM-1/8-D-MINI-NPT	173932	FRM-H-1/8-D-MINI-NPT	
	1/4 NPT	173925	FRM-1/4-D-MINI-NPT	173933	FRM-H-1/4-D-MINI-NPT	
	3/8 NPT	173926	FRM-3/8-D-MINI-NPT	173934	FRM-H-3/8-D-MINI-NPT	
Midi	3/8 NPT	173927	FRM-3/8-D-MIDI-NPT	173935	FRM-H-3/8-D-MIDI-NPT	
	1/2 NPT	173928	FRM-1/2-D-MIDI-NPT	173936	FRM-H-1/2-D-MIDI-NPT	
	3/4 NPT	173929	FRM-3/4-D-MIDI-NPT	173937	FRM-H-3/4-D-MIDI-NPT	
Maxi	3/4 NPT	173930	FRM-3/4-D-MAXI-NPT	173938	FRM-H-3/4-D-MAXI-NPT	
	1 NPT	173931	FRM-1-D-MAXI-NPT	173939	FRM-H-1-D-MAXI-NPT	

FAST* Program – FRM Distributor Block Selector Guide



FRM Distributor Blocks – D Series, NPT

*FAST = Festo Assured Shipping Time. Ordering via the FAST program means same day / next day shipping from our warehouse of the parts required to assemble a complete air preparation unit.



A complete distributor assembly consists of the following items:

Item	Description	Qty Required per Assy
1	Main Unit	1
2	Port Block Kit	2 (one left, one right)
3	Single Unit Joining Rod	2
4	Mounting Bracket Kit (Not shown) (Optional)	1

Step 1: Based upon the required Port Size, Maximum Flow, and Thread Type, select the Main Unit (Item 1) and the Left and Right Port Block (Item 2).

			Item									
			1	2								
Port Size	Max. Flow (l/min/scfm)	Check Valve	Product Type / Description	Main Unit	NPT Thread		BSP Thread					
					Left Port Block Kit	Right Port Block Kit	Left Port Block Kit	Right Port Block Kit				
1/8	1500/52.9	No	FRM-...-D-MINI-...	170684	546520	546521	546495	546496				
	1300/45.9	Yes	FRM-H-...-D-MINI-...	170687								
1/4	3300/116.5	No	FRM-...-D-MINI-...	170684	546522	546523	546497	546498				
	2000/70.6	Yes	FRM-H-...-D-MINI-...	170687								
	3500/123.6	No	FRM-...-D-MIDI-...	170685					546536	546537	546532	546489
	3400/120.1	Yes	FRM-H-...-D-MIDI-...	170688								
3/8	3300/116.5	No	FRM-...-D-MINI-...	170684	546524	546525	546499	546500				
	2100/74.2	Yes	FRM-H-...-D-MINI-...	172687								
	7000/247.2	No	FRM-...-D-MIDI-...	170685					546530	546531	546501	546502
	5500/194.2	Yes	FRM-H-...-D-MIDI-...	170688								
1/2	8200/289.6	No	FRM-...-D-MIDI-...	170685	546526	546527	546503	546504				
	5600/197.8	Yes	FRM-H-...-D-MIDI-...	170688								
	11700/413.2	No	FRM-...-D-MAXI-...	170686					546538	546539	546534	546535
	9600/339.0	Yes	FRM_H-...-D-MAXI-...	170689								
3/4	8800/310.8	No	FRM-...-D-MIDI-...	170685	546528	546529	546505	546506				
	5500/194.2	Yes	FRM_H-...-D-MIDI-...	170688								
	20000/706.3	No	FRM-...-D-MAXI-...	170686					546490	546492	546507	546508
	15000/529.7	Yes	FRM-H-...-D-MAXI-...	170689								
1	17400/614.5	No	FRM-...-D-MAXI-...	170686	546491	546493	546509	546510				
	13400/473.2	Yes	FRM-H-...-D-MAXI-...	170689								

FAST Program – FRM Distributor Block Selector Guide

FRM Distributor Blocks – D Series, NPT



Step 2: Based upon the Product Type/Description from Step 1, select the Joining Rods (Item 3) and the Mounting Bracket Kit (Item 4).

	Item 3	4 [Not shown]
Product Type/ Description	Single Unit Joining Rod	Mounting Bracket Kit (Optional)
FRM-...-D-MINI-...	359787	159638
FRM-H-...-D-MINI-...		
FRM-...-D-MIDI-...	369989	159593
FRM-H-...-D-MIDI-...		
FRM-...-D-MAXI-...	373059	
FRM-H-...-D-MAXI-...		

Step3: Determine the appropriate quantity of each Item.

Ordering Example:

Required: 3/8 port size, 5000 l/min flow, non-return flow check valve, BSP threads, and mounting bracket kit.

	Item	Part No.	Qty	Description
Order:	1	170688	1	Main Unit
	2	380297	1	Left Port Block Kit
		380299	1	Right Port Block Kit
	3	369989	2	Single Unit Joining Rod
	4	159593	1	Mounting Bracket Kit

Product Range and Company Overview

A Complete Suite of Automation Services

Our experienced engineers provide complete support at every stage of your development process, including: conceptualization, analysis, engineering, design, assembly, documentation, validation, and production.



Custom Automation Components
Complete custom engineered solutions



Custom Control Cabinets
Comprehensive engineering support and on-site services



Complete Systems
Shipment, stocking and storage services

The Broadest Range of Automation Components

With a comprehensive line of more than 30,000 automation components, Festo is capable of solving the most complex automation requirements.



Electromechanical
Electromechanical actuators, motors, controllers & drives



Pneumatics
Pneumatic linear and rotary actuators, valves, and air supply



PLCs and I/O Devices
PLC's, operator interfaces, sensors and I/O devices

Supporting Advanced Automation... As No One Else Can!

Festo is a leading global manufacturer of pneumatic and electromechanical systems, components and controls for industrial automation, with more than 12,000 employees in 56 national headquarters serving more than 180 countries. For more than 80 years, Festo has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment. Our dedication to the advancement of automation extends beyond technology to the education and development of current and future automation and robotics designers with simulation tools, teaching programs, and on-site services.

Quality Assurance, ISO 9001 and ISO 14001 Certifications

Festo Corporation is committed to supply all Festo products and services that will meet or exceed our customers' requirements in product quality, delivery, customer service and satisfaction.

To meet this commitment, we strive to ensure a consistent, integrated, and systematic approach to management that will meet or exceed the requirements of the ISO 9001 standard for Quality Management and the ISO 14001 standard for Environmental Management.



© Copyright 2008, Festo Corporation. While every effort is made to ensure that all dimensions and specifications are correct, Festo cannot guarantee that publications are completely free of any error, in particular typing or printing errors. Accordingly, Festo cannot be held responsible for the same. For Liability and Warranty conditions, refer to our "Terms and Conditions of Sale", available from your local Festo office. All rights reserved. No part of this publication may be reproduced, distributed, or transmitted in any form or by any means, electronic, mechanical, photocopying or otherwise, without the prior written permission of Festo. All technical data subject to change according to technical update.



Printed on recycled paper at New Horizon Graphic, Inc., FSC certified as an environmentally friendly printing plant.

Festo North America

Festo Regional Contact Center

5300 Explorer Drive
Mississauga, Ontario L4W 5G4
Canada

USA Customers:

For ordering assistance,
Call: 1.800.99.FESTO (1.800.993.3786)
Fax: 1.800.96.FESTO (1.800.963.3786)
Email: customer.service@us.festo.com

For technical support,
Call: 1.866.GO.FESTO (1.866.463.3786)
Fax: 1.800.96.FESTO (1.800.963.3786)
Email: product.support@us.festo.com

Canadian Customers:

Call: 1.877.GO.FESTO (1.877.463.3786)
Fax: 1.877.FX.FESTO (1.877.393.3786)
Email: festo.canada@ca.festo.com

USA Headquarters

Festo Corporation
395 Moreland Road
P.O. Box 18023
Hauppauge, NY 11788, USA
www.festo.com/us

USA Sales Offices

Appleton

North 922 Tower View Drive, Suite N
Greenville, WI 54942, USA

Boston

120 Presidential Way, Suite 330
Woburn, MA 01801, USA

Chicago

1441 East Business Center Drive
Mt. Prospect, IL 60056, USA

Dallas

1825 Lakeway Drive, Suite 600
Lewisville, TX 75057, USA

Detroit – Automotive Engineering Center

2601 Cambridge Court, Suite 320
Auburn Hills, MI 48326, USA

New York

395 Moreland Road
Hauppauge, NY 11788, USA

Silicon Valley

4935 Southfront Road, Suite F
Livermore, CA 94550, USA

Central USA

Festo Corporation
1441 East Business
Center Drive
Mt. Prospect, IL 60056, USA
Phone: 1.847.759.2600
Fax: 1.847.768.9480



Western USA

Festo Corporation
4935 Southfront Road,
Suite F
Livermore, CA 94550, USA
Phone: 1.925.371.1099
Fax: 1.925.245.1286



Festo Worldwide

Argentina Australia Austria Belarus Belgium Brazil Bulgaria Canada Chile China Colombia Croatia Czech Republic Denmark
Estonia Finland France Germany Great Britain Greece Hong Kong Hungary India Indonesia Iran Ireland Israel Italy Japan Latvia
Lithuania Malaysia Mexico Netherlands New Zealand Norway Peru Philippines Poland Romania Russia Serbia Singapore
Slovakia Slovenia South Africa South Korea Spain Sweden Switzerland Taiwan Thailand Turkey Ukraine United States Venezuela

www.festo.com

United States



USA Headquarters, East: Festo Corp., 395 Moreland Road, Hauppauge, NY 11788
Phone: 1.631.435.0800; Fax: 1.631.435.8026;
Email: info@festo-usa.com www.festo.com/us

Canada



Headquarters: Festo Inc., 5300 Explorer Drive, Mississauga, Ontario L4W 5G4
Phone: 1.905.624.9000; Fax: 1.905.624.9001;
Email: festo.canada@ca.festo.com www.festo.ca

Mexico



Headquarters: Festo Pneumatic, S.A., Av. Ceylán 3, Col. Tequesquihuac,
54020 Tlalnepantla, Edo. de México
Phone: 011 52 [55] 53 21 66 00; Fax: 011 52 [55] 53 21 66 65;
Email: festo.mexico@mx.festo.com www.festo.com/mx