Service unit combination MSB4N-FRC

FESTO

Characteristics

At a glance

Combination of filter regulator and lubricator.

- Grid dimension: 40 mm
- High flow rate and extremely efficient in removing contaminants
- Good regulation characteristics with minimal pressure hysteresis
- Setting values are secured by locking the rotary knob
- Lockable rotary knob
- Two pressure regulation ranges: 4.4 ... 103 psi and 7.4 ... 176 psi
- Optionally with manual or fully automatic condensate drain
- Choice of filter inserts 5 µm or 40 µm

Engineering tools

Link engineering tools

A selection tool for sizing a suitable service unit component and the correct air purity class can be found under Engineering Tools.

Type code

001	Series	
MSB	Service unit component MS series	

002	Size	
4	Grid dimension 40 mm	

003	Thread type	
N	NPT thread	

004	Pneumatic connection, inch	
1/8	Female thread NPT 1/8	
1/4	Female thread NPT 1/4	

005	Function	
FRC	Service unit combination	

006	Service unit component equipment	
J1	Filter regulator, 0.5 ... 12 bar, 40 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
J2	Filter regulator, 0.5 ... 12 bar, 40 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
J3	Filter regulator, 0.5 ... 12 bar, 5 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
J4	Filter regulator, 0.5 ... 12 bar, 5 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
J5	Filter regulator, 0.3 ... 7 bar, 40 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
J6	Filter regulator, 0.3 ... 7 bar, 40 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
J7	Filter regulator, 0.3 ... 7 bar, 5 µm, plastic bowl with plastic bowl guard, manual condensate drain, lockable rotary knob	
J8	Filter regulator, 0.3 ... 7 bar, 5 µm, plastic bowl with plastic bowl guard, fully automatic condensate drain, lockable rotary knob	
M1	Lubricator, plastic bowl with plastic bowl guard	

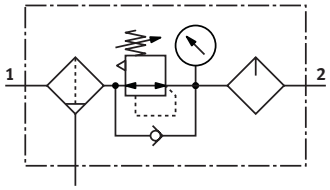
007	Flow direction	
	Flow direction from left to right	

Datasheet

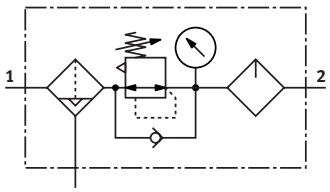
General technical data

Grade of filtration	5	40	
Air purity class at output	Compressed air to ISO 8573-1:2010 [6:4:-]		Compressed air to ISO 8573-1:2010 [7:4:-]
Pneumatic connection, port 1	1/8 NPT, 1/4 NPT		
Pneumatic connection, port 2	1/8 NPT, 1/4 NPT		
Design	Filter regulator with pressure gauge, Proportional standard mist lubricator		
Controller function	Output pressure constant, Via primary pressure compensation, With secondary venting, With return flow function		
Type of mounting	With accessories		
Mounting position	Vertical +/-5°		
Bowl guard	Plastic bowl guard		
Condensate drain	Fully automatic Manually rotating	Fully automatic	Fully automatic Manually rotating
Actuator lock	Rotary knob with integrated lock		
Pressure regulation range	1 ... 12 bar	1 ... 7 bar	1 ... 12 bar
Pressure gauge (ANALOG) or Pressure display (DIGITAL)	With pressure gauge		
Product weight	500 g		

Function (with manual condensate drain)



Function (with fully automatic condensate drain)



Standard nominal flow rate (measured at p1 = 10 bar, p2 = 6 bar and Δp = 1 bar)

Pneumatic connection, port 1	1/8 NPT				1/4 NPT			
Grade of filtration	5 µm		40 µm		5 µm		40 µm	
Pressure regulation range	1 ... 7 bar	1 ... 12 bar	1 ... 7 bar	1 ... 12 bar	1 ... 7 bar	1 ... 12 bar	1 ... 7 bar	1 ... 12 bar
Standard nominal flow rate (standardised to DIN 1343)[1)]	900 l/min	800 l/min	900 ... 950 l/min	850 l/min	1,300 l/min	850 l/min	1,300 ... 1,400 l/min	900 ... 1,400 l/min

1) 125 l/min must be available for the fully automatic condensate drain to close correctly.

Datasheet

Operating and environmental conditions

Condensate drain	Fully automatic						Manually rotating					
Pressure regulation range	1 ... 7 bar		1 ... 12 bar				1 ... 7 bar				1 ... 12 bar	
Operating pressure	1.5 ... 12 bar	1.5 ... 14 bar	1.5 ... 12 bar	1.5 ... 14 bar			1.5 ... 12 bar	1.5 ... 14 bar				
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:-] Inert gases	Compressed air to ISO 8573-1:2010 [-:4:-] Inert gases	Compressed air to ISO 8573-1:2010 [7:4:-] Inert gases	Compressed air to ISO 8573-1:2010 [-:4:-] Inert gases			Compressed air to ISO 8573-1:2010 [7:4:-] Inert gases	Compressed air to ISO 8573-1:2010 [-:4:-] Inert gases				
Grade of filtration	40 µm		5 ... 40 µm	40 µm			5 µm	40 µm			5 ... 40 µm	
Note on operating and pilot medium	Lubricated operation possible (in which case lubricated operation will always be required)											
Ambient temperature	5 ... 60°C	-10 ... 60°C	5 ... 60°C	-10 ... 60°C			5 ... 60°C	-10 ... 60°C				
Media temperature	5 ... 60°C	-10 ... 60°C	5 ... 60°C	-10 ... 60°C			5 ... 60°C	-10 ... 60°C				
Storage temperature	-10 ... 60°C											
Corrosion resistance class CRC [1]	2 - Moderate corrosion stress											
Suitable for use with food [2]	See supplementary material information											

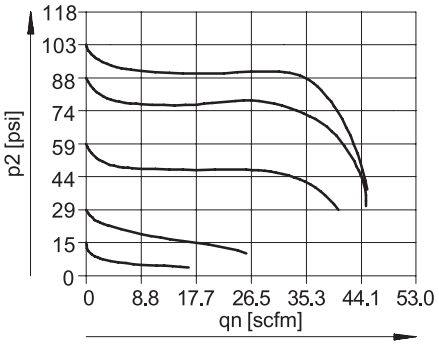
1) More information www.festo.com/x/topic/kbk

2) More information www.festo.com/catalogue/msb4n-frc → Support/Downloads.

Materials

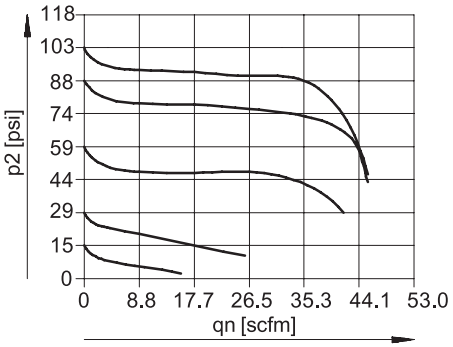
Material housing	Die-cast aluminium
Material bowl	PC
LABS (PWIS) conformity	VDMA24364-B1/B2-L

Normal flow qn as a function of output pressure p2 (MSB4N-1/8; pressure regulation range 4.4 ... 103 psi; grade of filtration 5 µm)



Primary pressure p1 = 147 psi

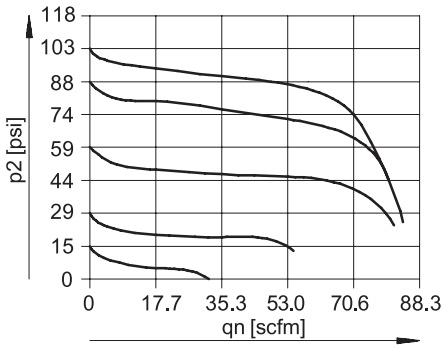
Normal flow qn as a function of output pressure p2 (MSB4N-1/8; pressure regulation range 4.4 ... 103 psi; grade of filtration 40 µm)



Primary pressure p1 = 147 psi

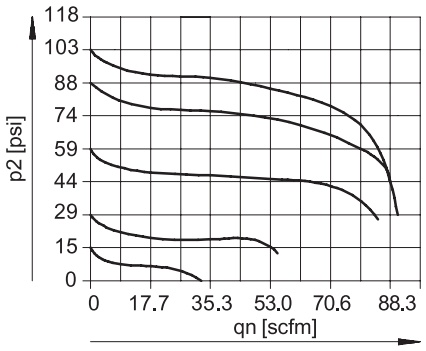
Datasheet

Normal flow qn as a function of output pressure p2 (MSB4N-1/4; pressure regulation range 4.4 ... 103 psi; grade of filtration 5 µm)



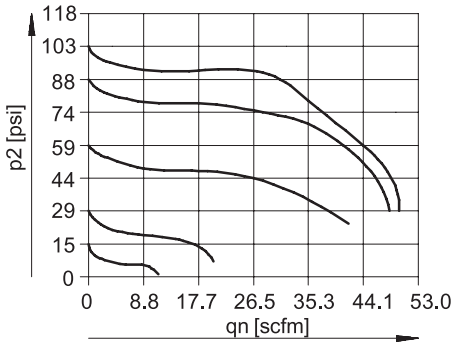
Primary pressure p1 = 147 psi

Normal flow qn as a function of output pressure p2 (MSB4N-1/4; pressure regulation range 4.4 ... 103 psi; grade of filtration 40 µm)



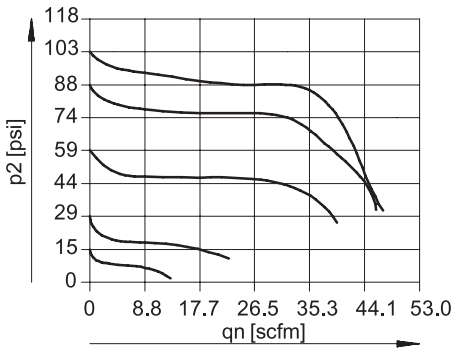
Primary pressure p1 = 147 psi

Normal flow qn as a function of output pressure p2 (MSB4N-1/8; pressure regulation range 7.4 ... 176 psi; grade of filtration 5 µm)



Primary pressure p1 = 147 psi

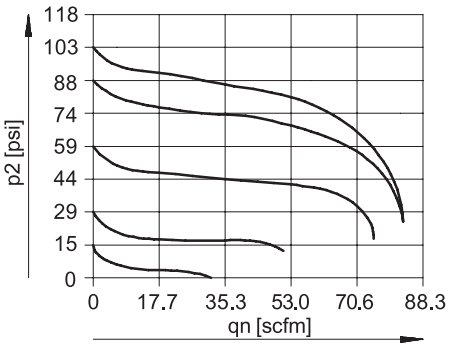
Normal flow qn as a function of output pressure p2 (MSB4N-1/8; pressure regulation range 7.4 ... 176 psi; grade of filtration 40 µm)



Primary pressure p1 = 147 psi

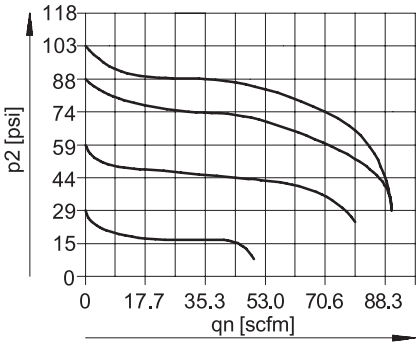
Datasheet

Normal flow qn as a function of output pressure p2 (MSB4N-1/4; pressure regulation range 7.4 ... 176 psi; grade of filtration 5 µm)



Primary pressure p1 = 147 psi

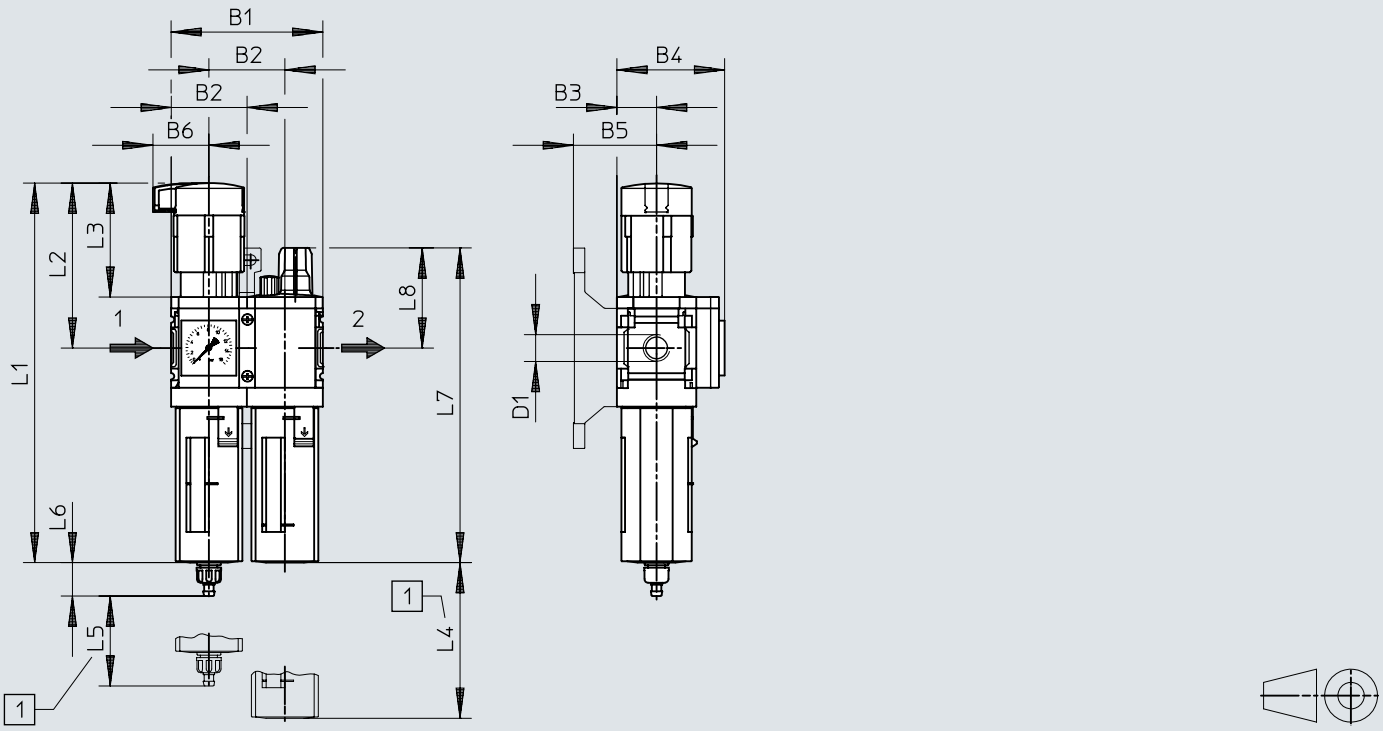
Normal flow qn as a function of output pressure p2 (MSB4N-1/4; pressure regulation range 7.4 ... 176 psi; grade of filtration 40 µm)



Primary pressure p1 = 147 psi

Dimensions

Dimensions – With pressure gauge, display unit [psi] Download CAD data www.festo.com



[1] Installation dimension

	B1 [inch]	B2 [inch]	B3 [inch]	B4 [inch]	B5 [inch]	B6 [inch]	D1	L1 [inch]	L2 [inch]	L3 [inch]	L4 [inch]	L5 [inch]	L6 [inch] 1)	L6 [inch] 2)	L7 [inch]	L8 [inch]
MSB4N-1/8	3,17	1,58	0,58	2,24	1,74	1,17	1/8 NPT	7,91	3,43	2,36	3,15	0,98	0,7	0,8	6,57	2,09
MSB4N-1/4							1/4 NPT									

1) Manual condensate drain
2) Fully automatic condensate drain

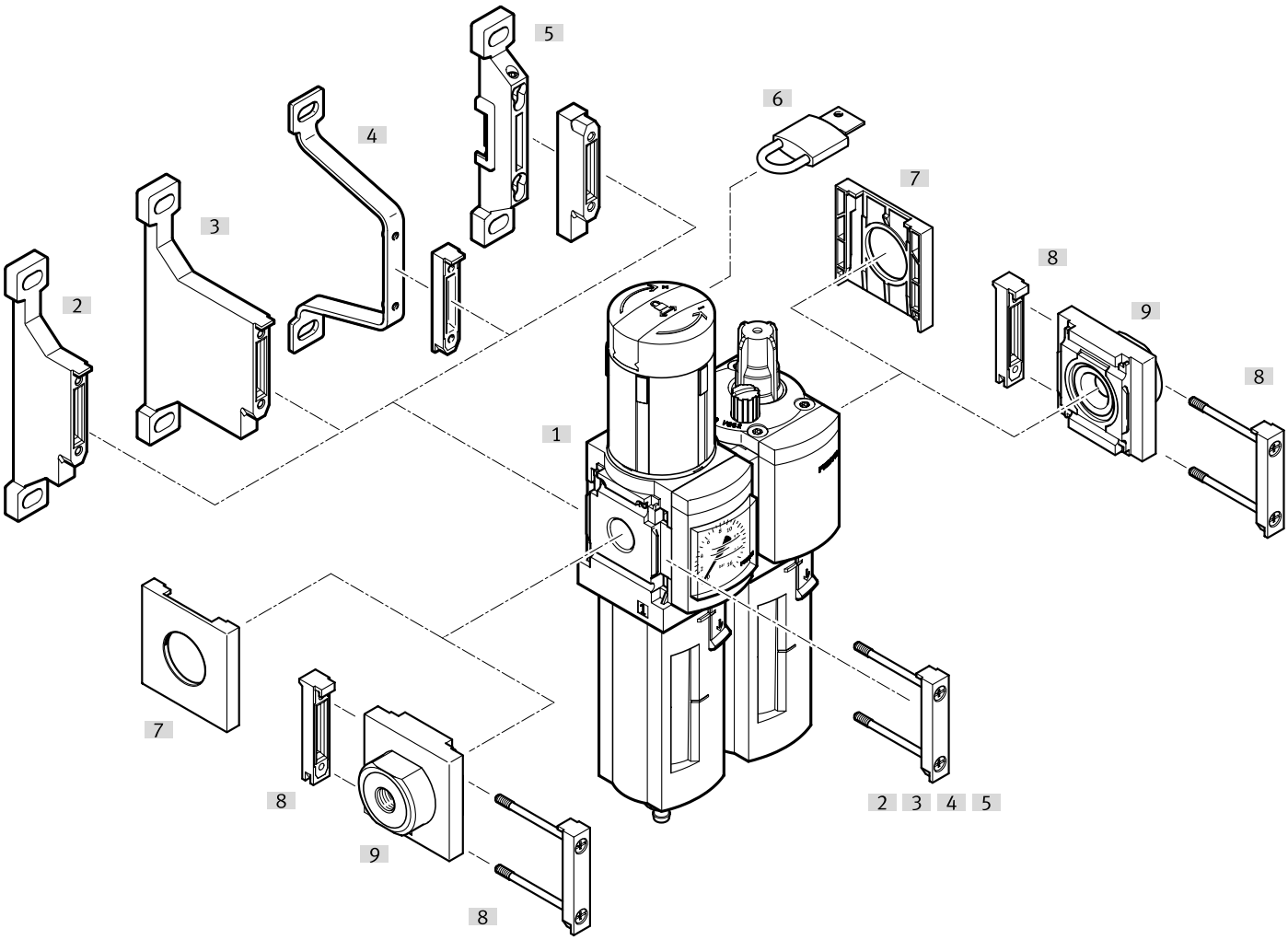
Ordering data

Ordering data

	Pneumatic connection, port 1	Condensate drain	Grade of filtration	Pressure regulation range	Standard nominal flow rate (standardised to DIN 1343)	Part no.	Type
	1/8 NPT	Fully automatic	5 µm	1 ... 12 bar	800 l/min	**533977**	**MSB4N-1/8-FRC8:J4M1**
			40 µm	1 ... 7 bar	900 l/min	**533967**	**MSB4N-1/8-FRC3:J7M1**
					950 l/min	**533965**	**MSB4N-1/8-FRC2:J6M1**
				1 ... 12 bar	850 l/min	**533973**	**MSB4N-1/8-FRC6:J2M1**
						533971	**MSB4N-1/8-FRC5:J1M1**
		Manually rotating	5 µm	1 ... 7 bar	900 l/min	**533969**	**MSB4N-1/8-FRC4:J8M1**
				1 ... 12 bar	800 l/min	**533975**	**MSB4N-1/8-FRC7:J3M1**
			40 µm	1 ... 7 bar	950 l/min	**533963**	**MSB4N-1/8-FRC1:J5M1**
	1/4 NPT				1,400 l/min	**533949**	**MSB4N-1/4-FRC2:J6M1**
		Fully automatic	5 µm	1 ... 12 bar	850 l/min	**533961**	**MSB4N-1/4-FRC8:J4M1**
			40 µm	1 ... 7 bar	1,300 l/min	**533951**	**MSB4N-1/4-FRC3:J7M1**
				1 ... 12 bar	900 l/min	**533957**	**MSB4N-1/4-FRC6:J2M1**
		Manually rotating	5 µm	1 ... 7 bar	1,300 l/min	**533953**	**MSB4N-1/4-FRC4:J8M1**
				1 ... 12 bar	850 l/min	**533959**	**MSB4N-1/4-FRC7:J3M1**
			40 µm		900 l/min	**533955**	**MSB4N-1/4-FRC5:J1M1**
					1,400 l/min	**533947**	**MSB4N-1/4-FRC1:J5M1**

Peripherals

Peripherals overview



Accessories			→ Link
	Type/order code	Description	
[1]	Service unit combination MSB4N-FRC		msb4n-frc
[2]	Mounting bracket MS4-WP		11
[3]	Mounting bracket MS4-WPB		11
[4]	Mounting bracket MS4-WPE		11
[5]	Mounting bracket MS4-WPM		11
[6]	Padlock LRVS-D		12
[7]	Cover cap MS4-END		11
[8]	Module connector MS4-MV1		11
[9]	Connecting plate SET MS4N-AQ...		11

Accessories

Cover cap MS4-END

	Size	Part no.	Type
	4	**538779**	**MS4-END**

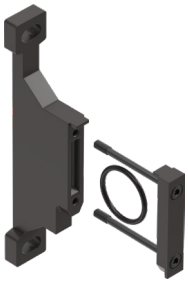
Connecting plate SET MS4N-AQ...

	Size	Pneumatic connection, port 1	Product weight	Part no.	Type
	4	1/8 NPT	128 g	**526065**	**MS4N-AQK**
		1/4 NPT		**526066**	**MS4N-AQN**
		3/8 NPT		**526067**	**MS4N-AQP**

Module connector MS4-MV1

	Size	Product weight	Part no.	Type
	4	13 g	**8119201**	**MS4-MV1**

Mounting bracket MS4-WP...

	Size	Product weight	Part no.	Type
	4	39 g	**532184**	**MS4-WP**
		45 g	**526060**	**MS4-WPM-D**
		55 g	**526063**	**MS4-WPB**
			526061	**MS4-WPM-2D**

Filter cartridge MS-LFP

	Size	Grade of filtration	Part no.	Type
	4	5 µm	**534501**	**MS4-LFP-C**

Accessories

Filter cartridge MS-LFP

	Size	Grade of filtration	Part no.	Type
	4	40 µm	**534502**	**MS4-LFP-E**

Special oil OPSW-32 (1 litre)

	Short type code	Part no.	Type
	OFSW	**152811**	**OFSW-32**

Padlock LRVS-D

	Short type code	Corrosion resistance class CRC [1]	LABS (PWIS) conformity	Product weight	Part no.	Type
	LRVS-D	2 - Moderate corrosion stress	VDMA24364-B1/B2-L	120 g	**193786**	**LRVS-D**

1) More information www.festo.com/x/topic/kbk