



Component List

for

Date
22.02.2016

Ford Valencia

- C520 (Kuga MCA)

Creator
Thorsten Weiss

Body-In-White

Version
1.1

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1 Change Documentation

Version	Date	Who	What	Pages
1.0	29.04.2015	Thorsten Weiss / Festo	First release	all pages
1.1	22.02.2016	Thorsten Weiss / Festo	- update valve terminal sample code	4.2



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3 Support from Festo

3.1 Online Shop

Benefits



- **Customer-specific prices and current product availability**
Avoid delays with direct access to information
- **Order tracking**
Check the status of your order at any time – even fax & phone orders
- **Save part lists**
Access frequently used products quickly and easily
- **Import/export part lists, and copy & paste**
Avoid typos and speed up your order process
- **Repeat orders**
Quick and easy: open previous orders as a new basket, make changes, then order
- **Completely flexible**
Manage and convert quotations at a time. Available 24 hours a day 7 days a week.

New - Sold to Party Switch/Price Partner Switch

Users with separate log on's for different project accounts can request activation of the Sold-To-Party Switch. Line builders with several project accounts can switch between accounts from one log-on.

Account Selection

Customer no.	**20006007 -ALLIED AUTOMATION, INC. -INDIANAPOLIS
Default	Select
Current Customer	**20006007 -ALLIED AUTOMATION, INC. -INDIANAPOLIS 20313718 -TRW AUTOMOTIVE -LIVONIA 20317226 -GM COMPONENT ENGINE (TONAWANDA) -REC PLANT 4 D 20325285 -ALLIED AUTOMATION/TYCO -INDIANAPOLIS 20331381 -TI AUTOMOTIVE PRICE PARTNER ACCT -NOT FOR SALES,V 20331421 -CHRYSLER - PRICE PARTNER -PRICE PARTNER AUBURN 20331626 -ALLIED AUTOMATION - CHRYSLER -INDIANAPOLIS 20333302 -ALLIED AUTOMATION - TI AUTOMOTIVE -INDIANAPOLIS 20336250 -ALLIED AUTOMATION - GM -INDIANAPOLIS 20345379 -ALLIED AUTOMATION-DSSI -INDIANAPOLIS 20372394 -DISTRIBUTOR PRICE PARTNER *** Not for Order - Entry *** 20383740 -ALLIED -JENNERLAHN -INDIANAPOLIS **20006007 -ALLIED AUTOMATION, INC. -INDIANAPOLIS
Customer no.	
Company name	
Address	
Phone no.	
Fax no.	317 253 5901
e-mail	→ accounts.payable@allied-automation.com
Price Partner	
Price Partner Account	20372394 -DISTRIBUTOR PRICE PARTNER
Address	395 MORELAND ST US- 11788 HAUPPAUGE

[Back to Basket](#)

Please contact your local sales office to activate Sold to Party Switch/Price Partner Switch facility!

3.2 Support Portal

The Support Portal is the first place to look for information on current and past Festo products. Find technical documentation, user manuals and declarations of conformity along with engineering software, firmware & drivers, brochures & audio visual media.



[Support Portal](#)

[Support Portal - Help](#)

3.3 Support Community

The Festo Support Community provides an online space for engineers to ask questions about Festo products and their application. Questions are answered by Festo Technical Support or other users.



[Festo Support Community](#)

[Festo Support Community - help](#)

3.4 Engineering Software

Find suitable products for your application with Festo engineering tools. Avoid complex reality tests and use our engineering tools to simulate your application.

The right product in just a few steps:

- Enter the general technical conditions
- Start the simulation
- Evaluate the simulation results
- Select the appropriate products from a list of suggestions

You can find all available software in the Festo online catalogue. To get an overview on all engineering tools, visit the Support Portal.



[Festo Online Catalogue](#)

[Support Portal](#)



3.5 Safety

Laws and directives are in force to ensure the safety of machines which interact with human beings- e.g. the EC machinery directive (ECMD).

Festo's solutions for safety functions can help to ensure the safety of your system.

After the risk assessment has been carried out, Festo supports you with technical safety measures:

- Safety sensors on the input level
- Safety controls on the processing level (logic)
- Protective measures on the output level

The Sistema software is only a tool for performing the safety engineering evaluations. To do this, it uses databases with safety-related specifications for products and solutions. There are numerous links to libraries on the website of the IFA.

The library of Festo's safety engineering coefficients is available as a download on Festo's website:



[Register now for download](#)

3.6 CAD Data

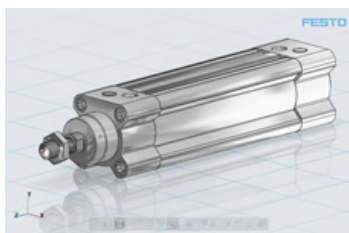
2D and 3D CAD models of Festo products are available as neutral exchange formats by email and for registered users, in many native formats for direct download.

More than 180,000 downloads are started each month by users who access the latest CAD data directly via our website.

Take advantage of this opportunity and select your preferred format from more than 45 available exchange formats – including new native formats.

CAD data are available for more than 30,000 products in several hundreds of thousands of variants via e-mail, download or direct to CAD function (PART2cad).

With the help of “CAD direct”, you can access CAD data for the desired product by simply entering the part number.



[Festo CAD Data](#)



3.7 Festo Didactic

Festo Didactic is a global leader in basic and further training in industry. As a provider of skills development for manufacturing and process automation, the services we offer range from educational equipment for training facilities to training and advice for industrial production companies.

Training and Consulting - Consistent focus on value creation

Improving the people part of productivity, our approach is competency-based – getting people fit for productivity. Festo offers a wide scope of training services covering three skills areas, Technology, Organization and People and the three factors in productivity, Quality, Time and Cost.

- Training courses
- Business improvement projects
- Consulting



[Festo Didactic Training & Consulting](#)

Learning Systems - Factory & process automation training equipment

Discover the complete range of products and services from technology oriented Training Packages to Learning Factories, Software, Teachware and fully equipped turnkey learning centres.

- Technical training packages
- Learning and simulation software
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[Learning systems products](#)




4 Release list overview

4.1 Pneumatic drives





4.1.1 Standard Cylinder

Name	Order code	Remarks	Picture	Documentation
Standard cylinder DSBC	DSBC-...-PPS 	Diameter 32, 40, 50, 63, 80, 100, 125 mm Stroke length 1 ... 2800 mm Force 483 ... 7363 N Double-acting Position sensing Adjustable/self-adjusting cushioning Female thread Male thread Standard profile with two sensor slots Pneumatic locks - Active use: DNCKE-...-S option - Passive use: DNCKE-.. or "C" option - End locks: "E" Option Design review with Ford controls / Festo required.		DSBC (de) DSBC (engb)
Standard cylinder DSBG	DSBG-...-PPS DSBG-...-PPV 	Diameter 32, 40, 50, 63, 80, 100, 125, 160, 200 mm Stroke length 1 ... 2800 mm Force 483 ... 18850 N Double-acting Position sensing Adjustable/self-adjusting cushioning Female thread Male thread - Heavy-duty tie rod variant		DSBG (de) DSBG (engb)
Standard cylinder ADN, AEN ISO 21287	ADN-...-PPS AEN-...-PPS	Diameter 12, 16, 20, 25, 32, 40, 50, 63, 80, 100, 125 mm Stroke length 1 ... 500 mm Force 68 ... 7 363 N Position sensing Pneumatic cushion "PPS" preferred Pneumatic locks - Passive use: "KP" option - End locks: "EL" Option Design review with Ford controls / Festo required.		ADN (engb) ADN (de)
Standard cylinder DSNU DIN ISO 6432	DSNU-...-PPS	Diameter 8...25 mm Stroke length 1 ... 500 mm Force 30 ... 295 N Position sensing Pneumatic cushion "PPS" preferred Pneumatic locks - Passive use: "KP" option Design review with Ford controls / Festo required.		DSNU (engb) DSNU (de)






4.1.2 Other Cylinders

Name	Order code	Remarks	Picture	Documentation
Guided drive unit DFM	DFM-...	Diameters 12, 16, 20, 25, 32, 40, 50, 63, 80, 100 mm Stroke length 10 ... 400 mm Force 68... 4,712 N Position sensing Pneumatic cushion "PPV" preferred Pneumatic locks - End locks: "AJ" or "EJ" option Design review with Ford controls / Festo required.		DFM (engb) DFM (de)
Flat cylinder (Non- Rotating) DZF	DZF-...	Diameter 16, 20, 25, 32, 40, 50, 63 mm Stroke length 10 ... 1 000 mm Force 121 ... 1 870 N Position sensing Adjustable cushioning Male thread		DZF (engb) DZF (de)
Flat cylinder (Non- Rotating) DZH	DZH-...	Diameter 16, 20, 25, 32, 40, 50, 63 mm Stroke length 1 ... 1000 mm Force 104 ... 1870 N Double-acting Protected against rotation Position sensing Adjustable cushioning Male thread		EZH-DZF-DZH (de) EZH-DZF-DZH (engb)
Rodless Cylinder (Band Type) DGC	DGC-...	Diameters 8, 25, 32, 40, 50, 63 mm Stroke length 10 ... 5,000 mm Force 153... 1,870 N Position sensing Cushioning due to application Mount cylinder with sealing band downwards to prevent ingress of weld spatter, dirt & liquids!		DGC (engb) DGC (de)
Semi-rotary drives DRRD	DRRD-...	Size 8, 10, 12, 16, 20, 25, 32, 35, 40, 50, 63 mm Torque 0.2 ... 112 Nm Swivel angle 0 ... 180° Position sensing Cushioning: elastic (P), hydraulic shock absorbers Flanged shaft		DRRD (de) DRRD (engb)




4.1.3 Clamping and stopper cylinder

Name	Order code	Remarks	Picture	Documentation
Clamping unit KEC, KPE, KP	KEC-... KPE-... KP-...	For round material 4, 6, 8, 10, 12, 16, 20, 25, 32 mm.		KEC (engb) KEC (de)
Stopper cylinder DFST	DFST-...	Diameter 50, 63, 80 mm Stroke length 30 to 40 mm Permissible impact force on the advanced piston rod 3000 ... 6000 N Position sensing Fixed cushioning		DFST (engb) DFST (de)
Stopper cylinders DFSP	DFSP-...	Diameter 16, 20, 32, 40, 50 mm Stroke length 5 ... 30 mm Permissible impact force on the advanced piston rod 880 ... 6280 N Position sensing Fixed cushioning Variants: trunnion, roller, non-rotating		DFSP (de) DFSP (engb)
Clamping unit cylinder DNCKE	DNCKE-...-S	Diameters 40, 63, 100 mm Stroke length 10 ... 2000 mm Force 754 ... 4712 N Double-acting Position sensing Adjustable cushioning Male thread		DNCKE (de) DNCKE (engb)

4.1.4 Grippers



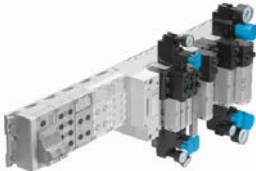
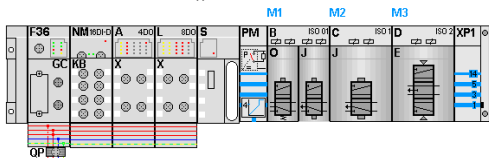


Name	Order code	Remarks	Picture	Documentation
Parallel gripper HGPT	HGPT-...	Size 16, 20, 25, 35, 40, 50, 63, 80 mm Stroke length 3 ... 20 mm per gripper jaw Force 53 ... 3150 N per gripper jaw Position sensing Sealing air connection.		HGPT (engb) HGPT (de)
Parallel gripper HGPL	HGPL-...	Size 14, 25, 40, 63 mm Stroke length 40 ... 150 mm per gripper jaw Force 79 ... 1371 N per gripper jaw Position sensing.		HGPL (engb) HGPL (de)
Parallel gripper HGPD	HGPD-...	Size 16, 20, 25, 35, 40, 50, 63, 80 mm Stroke length 3 ... 20 mm per gripper jaw Force 48 ... 1932 N per gripper jaw Completely sealed for harsh environments		HGPD (de) HGPD (engb)
Three-point gripper HGDD	HGDD-...	Size 35, 40, 50, 63, 80 mm Stroke length 4 ... 12 mm per gripper jaw Force 116 ... 993 N per gripper jaw Completely sealed for harsh environments		HGDD (de) HGDD (engb)
Three-point gripper HGDT	HGDT-...	Size 25, 35, 40, 50, 63 mm Stroke length 3 ... 10 mm per gripper jaw Force 69 ... 864 N per gripper jaw Position sensing.		HGDT (de) HGDT (engb)

4.1.5 Proximity sensors

Name	Order code	Remarks	Picture	Documentation
Proximity Sensor SMT-8M-A For standard applications!	574337 SMT-8M-A-PS-24V-E-0,3-M12	Voltage 5...30 V DC Cable length 0.1 ... 30 m Plug connection M12 Electrical Contactless PNP Short design ATEX certification		SMX8 (de) SMX8 (engb)
Proximity Sensor SMT0-8E For welding applications!	191986 SMTSO-8E-PS-M12-LED-24	Voltage 10 ... 30 V DC, 230 V AC Connection plug M12 Electric - Non-contacting PNP LED switching status display		SMX8 (de) SMX8 (engb)
Proximity Sensor SMT0-1 For welding applications!	30441 SMTSO-1-PS-S-LED-24	Voltage 10 ... 30 V DC Cable length: 2.5 m Connection plug M12 Electric PNP		SMX-1 (de) SMX-1 (engb)







4.2 Valve terminals





Name	Order code	Remarks	Documentation	
<p>Valve terminal electrical part</p>	<p>CPX</p> 	<p>Electrical Specification CPX: Controlled via fieldbus or control block: for existing equipment and replacement: - FB06 INTERBUS</p> <p>for new equipment: - FB32, EtherNet/IP - FB36, EtherNet/IP QuickConnect, 2-port switch</p> <p>Electrical connection: - Power connector 7/8" 5-pin</p> <p>Digital Input module: - "NMKB", 16x digital Inputs with M12 connection</p> <p>Digital Output module: - „AX“, alternative „LX“; 4x or 8x digital Outputs with M12 connection</p> <p>- Metal version preferred</p>	<p>VTSA (engb) VTSA (de)</p>	
<p>Valve terminal pneumatic part</p> <p>Type 44 VTSA</p> <p>ISO 15407-2, ISO 5599/2</p>	<p>VTSA</p> 	<p>Pneumatic Specification VTSA: Valves: - 2 - 32 valves / coils - ISO 01 (26mm), ISO 1 (42mm), ISO 2 (52mm), mix of sizes allowed - all valve functions allowed, 5/2 monostable valve with mechanical spring</p> <p>Supply plate: - "K" supply air1, exhaust air 3 and 5 separated</p> <p>Pilot air supply: - "XP1" external (end plate right)</p> <p>Soft start valve: - "PM" optional soft start valve</p>  <p>Example configuration:</p> <p>EtherNet/IP QuickConnect: 51E-F36GCQPNMKBAXLX-S+GSBA 44P-N-XP1-PM-BCD-OJJE+P1</p> 		
<p>Control block for CPX terminal</p> <p>FEC</p> <p>For manual fixtures!</p>	<p>CPX-FEC-1-IE</p> 	<p>Individual components for the electric terminal CPX</p> <p>Input/output modules -digital / analogue Bus node Sub-bases, Interlinking blocks, End plates.</p>		<p>CPX (de) CPX (engb)</p>

4.3 Valves

4.3.1 Standard valves

Name	Order code	Remarks	Picture	Documentation
Standard valve VSVA with round plugs M12x1	VSVA-B-...-1R5L 	Connection ISO 02, ISO 01, ISO 1 and ISO 2 Flow rate 400 ... 2800 l/min Voltage 24 V DC - Central M12 Connector Sub-base valve, Solenoid actuated, piloted Sub-bases.		ISO15407VSVA (de) ISO5599VSVA (de) ISO15407VSVA (engb) ISO5599VSVA (engb)
Standard valve JMEBH ISO 5599-1 U-NE 022	MEBH-...-D-3-ZSR-C JMEBH-...-D-3-ZSR-C 	Connection ISO 3 Flow 6 000 l/min Voltage 24VDC Sub-base valve - Electrically actuated, piloted - Central M12 Connector		ISO5599 (de) ISO5599 (engb)

4.3.2 Ball Valves

Name	Order code	Remarks	Picture	Documentation
Ball valves VZBA	VZBA-... 	Connection Rp 1/4, Rp 3/8, Rp 1/2, Rp 3/4, Rp1, Rp1 1/4, Rp1 1/2, Rp2 flow (rate) 75 ... 895 l/min flange hole pattern to ISO 5211 Corrosion and acid resistant versions.		VAPB (de) VAPB (engb)
Ball valve drive units VZPR	VZPR-... 	Port Rp 1/4, Rp 3/8, Rp 1/2, Rp 3/4, Rp1, Rp1 1/4, Rp1 1/2, Rp2, Rp2 1/2 Flow rate 100 ... 8900 l/min Electric and pneumatic actuation Ball valve with drive Namur port pattern, VDI/VDE 3845 Corrosion and acid-resistant designs 2-way on-off valve		VZPR (de) VZPR (engb)



4.3.3 Other valves

Name	Order code	Remarks	Picture	Documentation
Non-return valve, piloted HGL	HGL-...-B HAB-...	Connection M5, G 1/8, G 1/4, G 3/8, G 1/2 Flow 108 ... 1 540 l/min Shut-off valve - Pneumatic piloted non-return valve. Design review with Ford controls / Festo required!		HGL (engb) HGL (de)
Quick exhaust valve SE, SEU	SE-... SEU-...	Connection G 1/8, G 1/4, G 3/8, G 1/2, G 3/4 Flow 300 ... 6 480 l/min Shut-off valve.		SE (engb) SE (de)
Non-return valve H, HA, HB	H-...	Port M5, G1/8, G1/4, G3/8, G1/2, G3/4 Plug connector 2, 4, 6, 8, 10, 12 mm Flow rate 115 ... 2230 l/min Shut-off valve		H (engb) H (de)
One-way flow control valve in-line installation GR	GR-QS-...	Push-in connector 3, 4, 6, 8 mm Flow 0 ... 3 300 l/min Non-return and flow control valve.		GRX-VFOI (de) GRX-VFOI (engb)
One-way flow control valve GRLA 27752 GRLA-1/8-B-F-SA 27753 GRLA-1/4-B-F-SA 27754 GRLA-3/8-B-F-SA 27755 GRLA-1/2-B-F-SA	GRLA-...-B-SA 	Connection M3, M5, G 1/8, G 1/4, G 3/8, G 1/2 Plug connector 3, 4, 6, 8, 10, 12 mm Flow rate 0 ... 1,400 l/min Non-return and flow control valve.		GRX-VFO (de) GR-VF (engb) GRX-VFO (engb)
Proportional-pressure regulators VPPM	VPPM-...	Connection: G1/8, G1/4 Flow rate: 380 ... 2750 l/min. Pressure regulators 3 selectable presets (fast, universal, precise) Optionally available display.		VPPM-G (de) VPPM-G (engb)





4.4 Pneumatic fittings system and accessories

Name	Order code	Remarks	Picture	Documentation
Push-in fitting Metal NPQH Successor for fittings QS-F!	NPQH-... 	Connection M5, M7, G1/8, G1/4, G3/8, G1/2 For tubing outside diameter 4, 6, 8, 10, 12, 14 mm Ambient temperature 0 ... 150 °C Threaded connection - G thread with sealing ring Suitable for vacuum Push-in fittings Push-in connectors Push-in bulkhead connectors Push-in connectors with push-in sleeves Push-in bulkhead fittings		NPQH (de) NPQH (engb)
Plastic Tubing PUN-V0 SPARKEKX	PUN-V0-...-BL-C 	Diameters 6, 8, 10, 12, 16 mm Standard O.D. tubing Operating medium - Compressed air - Vacuum - Water Material: - Polyurethane - Flame Resistant - Colour: BLUE		PUN-V0 (engb) PUN-V0 (de)
Plastic Tubing PUN	PUN-...	Outside diameter 3 ... 16 mm Internal diameter 2.1 ... 11 mm Temperature-dependent operating pressure -0.95 ... 10 bar Ambient temperature -35 ... 60 °C Operating medium - Compressed air - Vacuum High resistance to stress cracks		OD-TUBING (engb) OD-TUBING (de)
Silencer U	U-...-B 	Port thread M3, M5, G1/2, G1/4, G1/8, G3/8, G3/4, G1 Noise level 65 ... 84 dB(A)		SILENCERS (de) SILENCERS (engb)
Quick coupling sockets KD	KD-...	Connection M3, M5, G 1/8, G 1/4, G 3/8, G 1/2 Diameter 2, 3, 4, 6, 9, 13 mm Threaded connection - Metric thread with sealing ring - G thread with sealing ring Shut-off on one side Shut-off on both sides Safety coupling to ISO 4414.		QUICK-COUPLINGS (de) QUICK-COUPLINGS (engb)
Coupling plug KS	KS-...	Connection M3, M5, G 1/8, G 1/4, G 3/8, G 1/2 Diameter 2, 3, 4, 6, 9, 13 mm Threaded connection - Metric thread with sealing ring - G thread with sealing ring Shut-off on one side Shut-off on both sides Safety coupling to ISO 4414.		QUICK-COUPLINGS (de) QUICK-COUPLINGS (engb)

4.5 Vacuum technology

Name	Order code	Remarks	Picture	Documentation
Vacuum generator, metric OVEM	OVEM-...	Nominal size 0.45 ... 2.0 mm Connection - Push-in connector QS6, QS8 Solenoid valve, vacuum ON/OFF Solenoid valve for ejector pulse Integrated vacuum switch. With preventive maintenance signal		OVEM (engb) OVEM (de)
Suction gripper ESG	ESG-...	Suction cup size diameter 2 ... 200 mm Connection - Male thread - Female thread - Push-in connector - Barbed connector Round suction cup - Standard - Extra deep suction cup - Bellows, 1.5-fold - Bellows, 3.5-fold - Bell-shaped Height compensator Angle compensator		ESG (engb) ESG (de)
Suction cup VAS	VAS-...	Suction cup size diameter 1 to 125 mm Connection - Male thread Round suction cup - Standard - Bellows, 1.5 convolutions		VAS (engb) VAS (de)
Suction cup ESS	ESS-... 	Suction cup size diameter 2 to 200 mm, 4x10 to 30x90 mm Connection - Male thread - Female thread Round suction cup - Standard - Extra deep suction cup - Bellows, 1.5-fold - Bellows, 3.5-fold - Bell-shaped Oval suction cup.		ESS-ESV (de) ESS-ESV (engb)
Vacuum Generator on Valve Terminal VABF	571425 VABF-S4-1-V2B1-C-VH-20	Nominal size, Laval nozzle 2 mm Operating pressure 4 ... 8 bar - Ejector pulse valve, electrical - Flow control valve - Electrical on-off valve - Air-saving circuit, electrical - Non-return valve - Open silencer - Vacuum switch		VABF (engb) VABF (de)

4.6 Sensors

Name	Order code	Remarks	Picture	Documentation
Pressure sensor SDE1	SDE1-...	Pressure sensor Vacuum sensor Differential pressure measurement Illuminated LCD with optimised display User optimised Adjustable switching point Pneumatic port G1/8, QS-4, R1/4, R1/8		SDE1 (engb) SDE1 (de)
Pressure sensor SPAB	SPAB-...	Pressure sensor Vacuum sensor Relative pressure measurement Illuminating LCD with red-green colour change display Protection class IP40		SPAB (engb) SPAB (de)
Flow sensor SFAM	SFAM-...	Flow measuring ranges - 10 ... 1000 l/min - 30 ... 3000 l/min - 50 ... 5000 l/min Switching output - 2x PNP Analogue output - 0 .. 10V - 4 ... 20mA Display with highly luminous LED for optimised visualisation Compatible and can be integrated with MS series service units.		SFAM (engb) SFAM (de)
Flow Switch for Water SFAW	SFAW-...	Connection G1/2 and G1 Flow rate measuring range 32 ... 85 L/min. for water Operating pressure 12 bar at 40°C and 6 bar at 100 °C Operating medium Media with a viscosity \leq 2mPa s Switching output 2 x PNP or 2 x NPN		

4.7 Compressed air preparation

Name	Type	Remarks	Picture	Documentation
Service unit MS4 MS6 MS9 MS12	MS4-... MS6-... MS9-... MS12-... 	Port G1/8, G1/4, G3/ Flow rate 550 ... 1500 l/min Port G1/4, G3/8, G1/2, G3/4 Flow rate 1900 ... 5100 l/min Port G1/2, G3/4, G1, G1 1/4, G1 1/2 Flow rate 5100 ... 14000 l/min. Port G1, G1 1/4, G1 1/2, G2 Flow rate 11500 ... 42000 l/min. Use only red-green gauges!		MS-COMBINATION (engb) MS-COMBINATION (de) MS-CONFIG-COMBINATION (engb) MS-CONFIG-COMBINATION (de) MS-LFR (engb) MS-LFR (de) MS-FILTERS (engb) MS-FILTERS (de) MS-LDM1 (engb) MS-LDM1 (de) MS-REGULATORS (engb) MS-REGULATORS (de) MS-START-UP-EXHAUST-VALVES (engb) MS-START-UP-EXHAUST-VALVES (de) MS-FRM (engb) MS-FRM (de)
Safety Shut Off & Soft Start Valve MS6-SV	MS6-SV-...	Size 6, Connection G1/2 Pressure 3.5 ... 10 bar Flow rate 4300 l/min Voltage 24 V DC Actuation solenoid actuated 3/2-way valve Normally closed		MS-SV (de) MS-SV (engb)
Safety Shut Off & Soft Start Valve MS9-SV	MS9-SV-...	Size 9, Connection G3/4, G1 Pressure 3.5 ... 16 bar Flow rate 16000 l/min Voltage 24 V DC, 110 V AC, 230 V AC Actuation solenoid actuated 3/2-way valve Normally closed		MS-SV (de) MS-SV (engb)
On-off valves HE-LO	HE-G-...-LO 	Port G1/8, G1/4, G3/8, G1/2, G3/4, G1 Pressure 0 ... 16 bar Flow rate 1000 ... 10000 l/min Actuation - Manually operated For shutting off the compressed air supply while simultaneously exhausting systems actuated by compressed air		HE-LO (de) HE-LO (engb)