



Small. Powerful. Versatile.

Compact Ejectors SCPM

The New Compact Ejectors SCPM from Schmalz

Small. Powerful. Versatile.

5000 Configurations

for a flexible vacuum generation according to individual needs



Compact Ejectors SCPMb, SCPMc and SCPMi

Intelligence and variability packaged in the smallest possible space: Schmalz's new compact ejector series SCPM opens up new applications for vacuum generators. They are among the smallest and most powerful ejectors on the market. The modular system with three different basic versions and the possibility of manifolding simplifies the selection and offers a wide range of possible applications. The "i" version of the SCPM offers numerous additional functions for monitoring and controlling the entire production process and is therefore ideal for use in the digital factory.



Compact Ejector SCPMc while removing plastic injection moulded parts

Application

- Mini compact ejector for handling airtight workpieces, such as display glass, plastic parts, printed-circuit boards (PCB), electronic parts or batteries
- For use in highly dynamic pick-and-place applications with extremely short cycle times and low space requirement, e.g. SMD machines
- For use in robotic handling applications and on linear axes as close to the suction cups as possible
- Fully automatic handling applications without downtime through intelligent condition monitoring
- Optional: SCPM can be used in combination with an external vacuum supply

Highlights of the Compact Ejectors SCPM

Full range of functions in the smallest installation space



Slim and robust design

- Only 80 g net weight
- Only 94 cm³ volume
- Low interference contour when installed



Optimized power to size ratio

- Maximum suction capacity in the smallest possible space



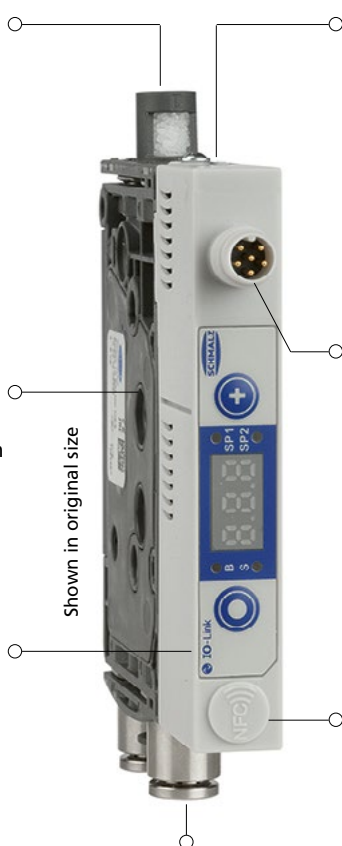
IO-Link interface

- Communicates with fieldbus for easy access to device and process data



Automatic air saving function

- Reduces compressed air consumption by up to 80 %



Shown in original size

Three basic versions with only one basic body

- SCPMb – Basic version
- SCPMc – Version with air saving function
- SCPMi – Intelligent version for energy and process monitoring
- Terminal – Manifold of up to 16 individual ejectors



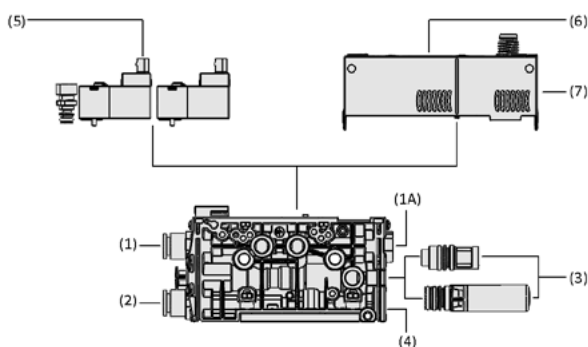
Intelligent functions

- Can be integrated into common fieldbus systems via IO-Link
- Condition monitoring for energy and process control (also in SIO mode)
- Simple connection with mobile app via NFC interface



NFC technology

- Transfer settings via smartphone
- Fast access to service and maintenance information



Design

- Minimal footprint thanks to compact basic body made of high-strength plastics and individual control module (7)
- 3-digit display with 2-button operation and M8 electrical connection, 6-pin plug (6)
- Pneumatic valves are either integrated (6) or mounted directly (5) for the NO or NC switching function
- Screw for adjusting blow-off (4)
- Changeable silencer or exhaust air duct (3); compressed air connection (1) and vacuum connection (2)
- Optional: Connection for external vacuum supply "EV"; connection for external blow off medium "EB" (1A)

Compact Ejectors SCPMb / SCPMc / SCPMi

Compact Ejectors SCPM

Configuration and ordering

Overview of functions		SCPMb	SCPMc	SCPMi	
Basic functions	Suction valve (NO or NC)	●	●	●	
	Blow-off function (NC)	●	●	●	
	Version for external vacuum generation (EV)	○	○	○	
	Version with external blow-off (EB)	○	○	○	
	Display (3-digit)		●	●	
	Pneumatic connections:	Push-in	●	●	●
		Thread	○	○	○
Electrical connections:	Valve connector MIC 10	●			
	M8-6		●	●	
	JST-5		○		
Additional functions	Condition Monitoring:	Via display		●	
		Via IO-Link (incl. energy and process control)		●	
	IO-Link function			●	
	NFC			●	
	Sensor:	Analog (1-5 V)		○	
Via external connection		●			
Digital (PNP or NPN)			●	●	
	Via IO-Link			●	
Terminal	Manifold:	Pneumatic (individual control)	●	●	
		Pneumatic and electrical (Multipol)		●	

● Standard function ○ Configurable option

Designation Code Compact Ejectors SCPM

SCPMc	-	07	-	S01	-	NC	-	M8-6	-	PNP	-	AAU
1		2		3		4		5		6		7

1 – Abbreviated designation

Code	Version
SCPMb	SCPMb (basic version)
SCPMc	SCPMc (with air saving function)
SCPMi	SCPMi (intelligent, IO-Link)

2 – Nozzle size

Code	Diameter in mm
03...12	ø 0.3 to 1.2
EV	For external vacuum supply

3 – Connection

Code	Connection
S01	Push-in quick coupling 4 mm
S04	Push-in quick coupling 6 mm

4 – Idle position suction valve

Code	Type
NC	Normally closed
NO	Normally open

5 – Connection electrical

Code	Connection
M8-6	M8, 6-pole

6 – Switching function

Code	Type
PNP	Switches to plus
NPN	Switches to minus

7 – Product addition

Code	Specification
AAU	Individual configuration code

The compact ejector SCPM is delivered as a ready-to-connect product (without connection cable). The modular system enables an individual configuration. Preconfigured versions are available for common applications.

Available spare parts: silencer insert

Available accessories: connection cable, connection distributor, silencer (low noise), DIN rail clamp, mounting bracket, plug-in screw union

Compact Ejectors SCPM

Configuration and ordering

Ordering Data Compact Ejectors SCPM (preconfigured ejectors)

Type	Nozzle size					Valve version EV
	03	05	07	10	12	
SCPMb...NC	10.02.02.05732	10.02.02.05734	10.02.02.05735	10.02.02.05737	10.02.02.06530	10.02.02.06219
SCPMb...NO	10.02.02.05731	10.02.02.05733	10.02.02.05591	10.02.02.05736	10.02.02.06531	10.02.02.06220
SCPMc...NC M8-6 NPN	10.02.02.05745	10.02.02.05747	10.02.02.05749	10.02.02.05751	10.02.02.06473	10.02.02.06221
SCPMc...NC M8-6 PNP	10.02.02.05739	10.02.02.05559	10.02.02.05742	10.02.02.05588	10.02.02.06532	10.02.02.06211
SCPMc...NO M8-6 PNP	10.02.02.05738	10.02.02.05740	10.02.02.05741	10.02.02.05743	10.02.02.06534	10.02.02.06217
SCPMc...NO M8-6 NPN	10.02.02.05744	10.02.02.05746	10.02.02.05748	10.02.02.05750	10.02.02.06472	10.02.02.06222
SCPMi...NC M8-6	10.02.02.05753	10.02.02.05755	10.02.02.05757	10.02.02.05692	10.02.02.06533	10.02.02.06218
SCPMi...NO M8-6	10.02.02.05752	10.02.02.05754	10.02.02.05756	10.02.02.05758	10.02.02.06535	10.02.02.06223

Ordering Data Spare Parts Compact Ejectors SCPM

Type	Spare parts	Part no.
SCPM... 03 to 05	Silencer insert (short)	SD-EINS 10.02.02.05806

Ordering Data Accessories Compact Ejectors SCPM

Type		Part no.
Connection cable, M8-6 socket, 2 m, PUR, straight, angled	ASK WB-M8-6 2000 K-6P	21.04.05.00488
Connection cable, M8-6 socket, M12-5 plug, 2 m, PUR, angled	ASK WB-M8-6 2000 S-M12-5	21.04.05.00489
Connection cable, MIC 10 socket, 3 m, PUR, straight	ASK B-MIC10 3000 K-2P	21.04.06.00086
Connection cable, JST-5, 2 m, straight, open end	ASK JST-5 2000 K-5P	21.04.05.00779
Connection distributor, 1xM8-6 socket, 2xM12-4 plug, 1 m, angled	ASV SMP1/SCPI 2xS-M12-4	10.02.02.05602
Silencer (low noise)	SD 10.5x34 SCPM	10.02.02.05807
DIN rail clamp	HUT-5N-KL 70x18x8	10.02.02.05805
Mounting bracket SCPM	BEF-WIN 36x15x50 SCPM	10.02.02.05824
Plug-in screw union M5	STV-GE M5-AG 4	10.08.02.00468
Plug-in screw union M7	STV-GE M7-AG 6	10.08.02.00469
Thread adapter M5-F	ADP-G M5-IG SCPM	10.02.02.05643
Thread adapter M7-F	ADP-G M7-IG SCPM	10.02.02.05641
Wear parts set SCPM	VST SCPM	10.02.02.06536

Preferred Product Range Schmalz Select. Further information can be found at: WWW.SCHMALZ.COM/SELECT

Compact Ejectors SCPM

Technical data and design data

Technical Data Compact Ejectors SCPM

Type	Degree of evacuation [%]	Suction rate (max.) [l/min]*	Air consumption suction [l/min]	Air consumption blow off [l/min]	Pressure range (operating pressure) [bar]
SCPM 03	87	2.2	3.5	10.0	3.0 ... 6.0
SCPM 05	87	7.5	9.0	10.0	3.0 ... 6.0
SCPM 07	87	15.0	22.0	10.0	3.0 ... 6.0
SCPM 10	87	28.0	45.0	10.0	3.0 ... 6.0
SCPM 12	92	30,0	51,0	10,0	3,5 ... 6,0
SCPM EV	-	33.0**	-	10.0	3.0 ... 6.0

*At optimal operating pressure (SCPM...03/05/07: 4 bar; SCPM...10/12: 4.5 bar)

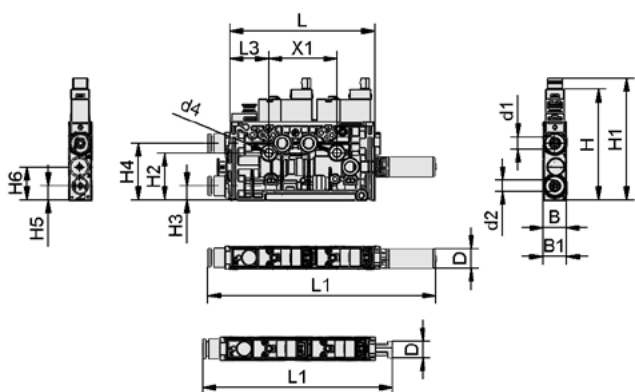
**The maximum flow rate of the EV version refers to a differential pressure at the valve of 600 mbar. For operation, a suction capacity of the vacuum generator of 7 m³/h against atmosphere is recommended.

Type	Noise level free [dB(A)]*	Noise level suction [dB(A)]*	Recomm. internal hose diameter compressed air [mm]**	Recomm. internal hose diameter vacuum [mm]**	Weight SCPMb [g]	Weight SCPMc/SCPMi [g]	Operating temperature [°C]
SCPM 03	51	42	2	2	65	80	0 ... 50
SCPM 05	66	55	2	2	70	85	0 ... 50
SCPM 07	70	70	2	2	70	85	0 ... 50
SCPM 10	71	72	4	4	70	85	0 ... 50
SCPM 12	76	75	4	4	70	85	0 ... 50
SCPM EV	-	-	4	4	75	90	0 ... 50

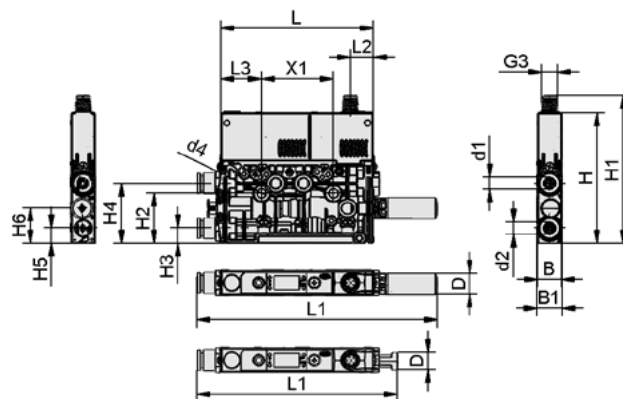
*At optimal operating pressure (SCPM 03/05/07: 4 bar; SCPM 10/12: 4.5 bar) / SCPM 12 with silencer low noise

**For max. length 2 m

Design Data Compact Ejectors SCPM



SCPMb



SCPMc / SCPMi

Compact Ejectors SCPM

Design data and performance data

Design Data Compact Ejectors SCPM

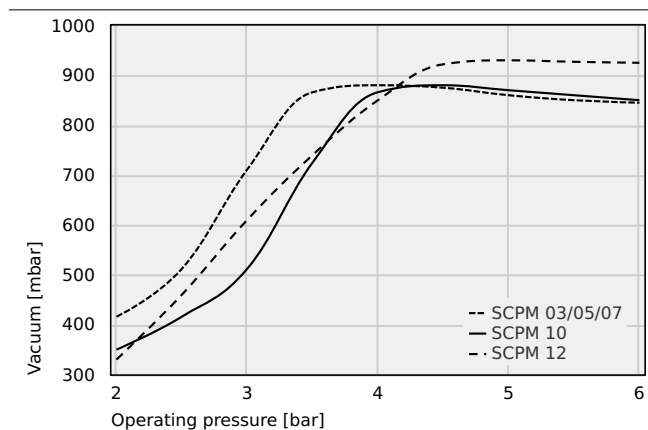
Type	B [mm]	B1 [mm]	d1 [mm]	d2 [mm]	d3 [mm]	d4 [mm]	D**	G3	H [mm]	H1 [mm]
SCPMb...S01	12	12.5	4	4	9	4.3	9 (10.5)	-	41.5	64.2
SCPMb...S04	12	12.5	6	6	9	4.3	9 (10.5)	-	41.5	64.2
SCPMc/SCPMi...S01	12	12.5	4	4	9	4.3	9 (10.5)	M8x1-AG	65.3	73.9
SCPMc/SCPMi...S04	12	12.5	6	6	9	4.3	9 (10.5)	M8x1-AG	65.3	73.9
SCPMb...EV*	12	12.5	4	6	-	4.3	-	-	41.5	64.2
SCPMc/SCPMi...EV*	12	12.5	4	6	-	4.3	-	M8x1-AG	65.3	73.9

Type	H2 [mm]	H3 [mm]	H4 [mm]	H5 [mm]	H6 [mm]	L [mm]	L1** [mm]	L2 [mm]	L3 [mm]	X1 [mm]
SCPMb...S01	25	7.5	30	7.5	17.5	76.5	95.3 (117.5)	-	20.5	36
SCPMb...S04	25	7.5	30	7.5	17.5	76.5	98.3 (120.5)	-	20.5	36
SCPMc/SCPMi...S01	25	7.5	30	7.5	17.5	76.5	95.3 (117.5)	11.4	20.5	36
SCPMc/SCPMi...S04	25	7.5	30	7.5	17.5	76.5	98.3 (120.5)	11.4	20.5	36
SCPMb...EV*	25	7.5	30	7.5	17.5	76.5	99.4	-	20.5	36
SCPMc/SCPMi...EV*	25	7.5	30	7.5	17.5	76.5	99.4	11.4	20.5	36

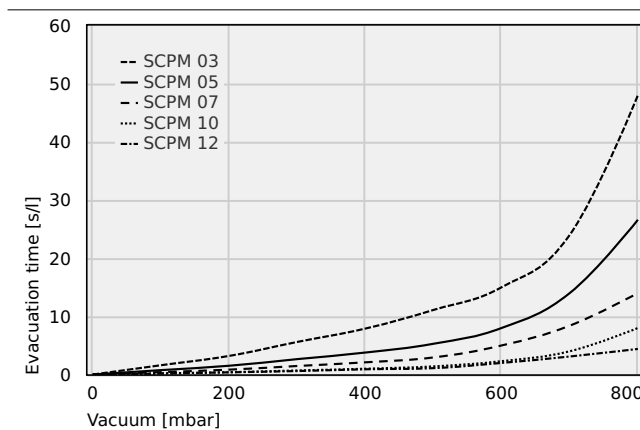
*Version for external vacuum generation with additional connection (1A)

**Values in brackets with silencer low noise / SCPM 12 only available with low noise silencer

Performance Data Compact Ejector SCPM



Achievable vacuum at different operating pressures



Evacuation times for various vacuum ranges [s/l]

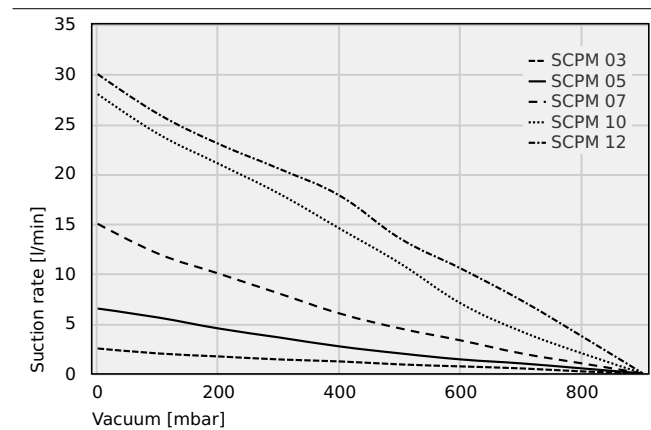
Evacuation times for various vacuum ranges [s/l]

	100	200	300	400	500	600	700	800
SCPM 03	1.60	3.20	5.60	7.90	11.10	15.00	24.00	48.00
SCPM 05	0.76	1.51	2.65	3.78	5.29	8.00	14.00	26.60
SCPM 07	0.42	0.84	1.47	2.10	2.94	5.00	8.40	14.00
SCPM 10	0.20	0.40	0.70	1.00	1.40	2.30	4.00	8.00
SCPM 12	0.18	0.38	0.60	0.90	1.10	2.00	3.10	4.40

Compact Ejectors SCPM

Performance data

Performance Data Compact Ejector SCPM



Suction capacity at various degrees of evacuation [l/m]

Suction capacity at various degrees of evacuation [l/m]

	0	100	200	300	400	500	600	700	800
SCPM 03	2.2	1.8	1.5	1.3	1.1	0.8	0.7	0.5	0.2
SCPM 05	7.5	6.5	5.2	4.2	3.1	2.0	1.4	1.0	0.5
SCPM 07	15.0	12.0	10.0	8.0	6.0	4.5	3.3	2.0	1.0
SCPM 10	28.0	24.0	21.0	18.0	14.5	11.0	7.0	4.2	2.0
SCPM 12	30,0	26,0	23,0	20,5	17,8	13,5	10,50	7,30	3,70

Compact Terminals SCTM

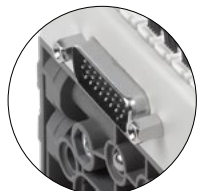
Highlights at a glance

Pneumatic manifold

- Common compressed air connection for up to 16 single ejectors
- Compact and lightweight design

Electrical manifold

- Terminal SCTMc-MP with Sub-D multi-pol plug connection (up to 7 ejectors)

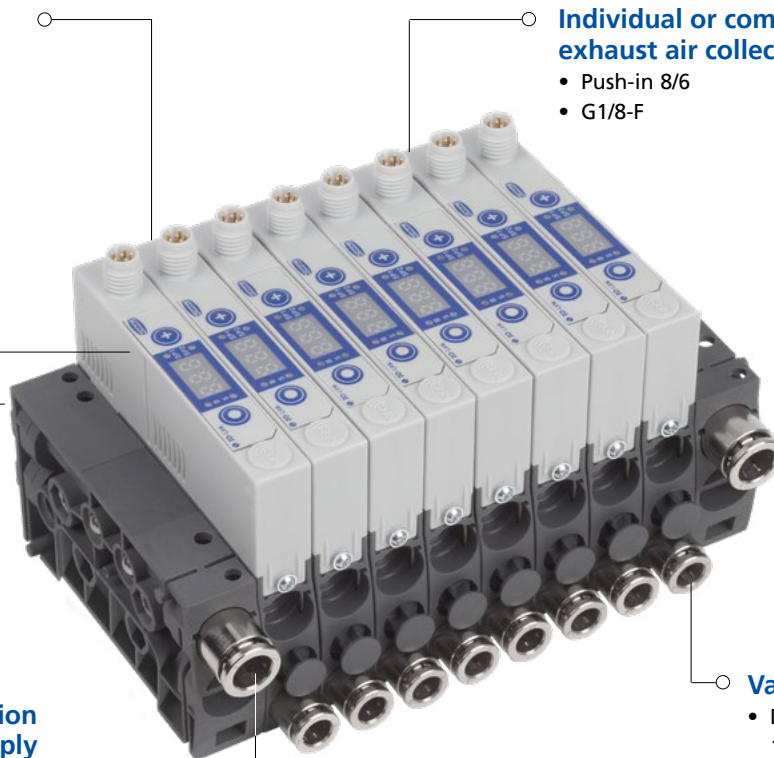


External blow-off function or external vacuum supply

- External blow-off "EB" or external vacuum supply "EV"
- Push-in: 8/6 or G1/8-F

Individual or common exhaust air collection

- Push-in 8/6
- G1/8-F

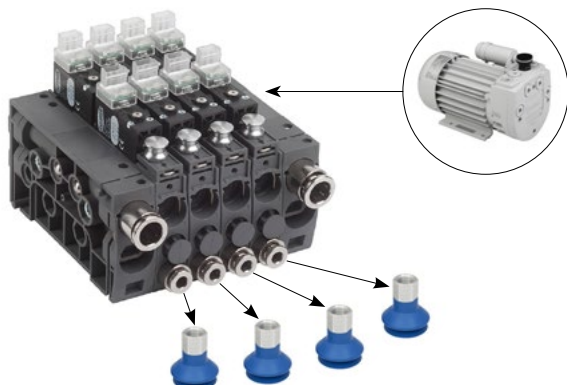


Vacuum connections

- Design and control of up to 16 individual vacuum circuits

Common compressed air supply

- Compressed air supply via only one connection
- Push-in: 8/6 or G1/8-F



Terminal with external vacuum supply

- Operation with external vacuum supply (e.g. a central vacuum pump)
- Central vacuum can be divided into up to 16 individual circuits
- Use as valve with IO-Link function and condition monitoring
- Pneumatic pilot control for fast switching cycles

Compact Terminal SCTM EV for external vacuum supply

Compact Terminals SCTM

Configuration and ordering

Designation Code Compact Terminals SCTM



Version Terminal SCTM

PNEUMATIC

Code	Type
SCTMb	Terminal with SCPMb ejectors
SCTMc	Terminal with SCPMc ejectors
SCTMi	Terminal with SCPMi ejectors

PNEUMATIC AND ELECTRICAL

Code	Type
SCTMc-MP	Terminal with SCPMc ejectors and D-Sub connector

Number of Ejectors

Code	Number of ejectors
2...16	2 up to 16

Code	Product addition
AA	Individual configuration code

Single Ejectors

Code*	Type
2A4F	2x SCPMtc-03-4-NC-JST-5-A4F
4A93	4x SCPMtc-05-4-NO-JST-5-A93
2ABF	2x SCPMtc-10-6-NC-JST-5-ABF

*Note:

See designation code for single ejectors on page 4

The modular design of the Compact Terminal SCTM allows individual configuration. Depending on requirements, up to 16 individual SCPM ejectors can be blocked to form a single terminal. Our system consultants support you in the selection of a suitable solution.

Example Configurations



Basic terminal SCTMb

- SCTMb-4-AA-4ALB
- Pneumatic manifold (common compressed air supply)
- Up to 16 ejectors



Intelligent terminal SCTMi

- SCTMi-8-AA-4B0Q-4B23
- Pneumatic manifold (common compressed air supply)
- Up to 16 ejectors



Multipol terminal SCTMc-MP

- SCTMc-MP-4-AA-2A97-2BE6
- Pneumatic and electrical manifold (D-Sub plug)
- Up to 8 ejectors

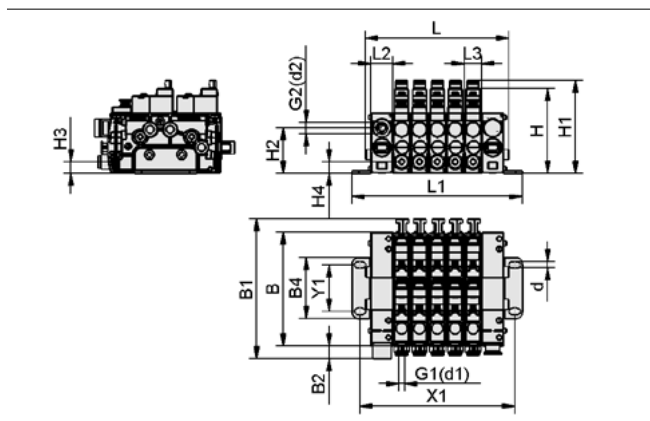
Compact Terminals SCTM

Technical data and design data

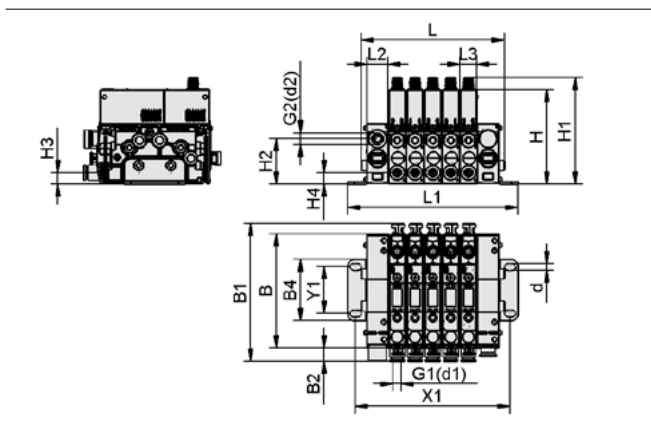
Technical Data Compact Terminals SCTM

The technical data of the compact terminals SCTM depend on the individual SCPM ejectors used. See the technical data of the SCPM compact ejectors on page 6.

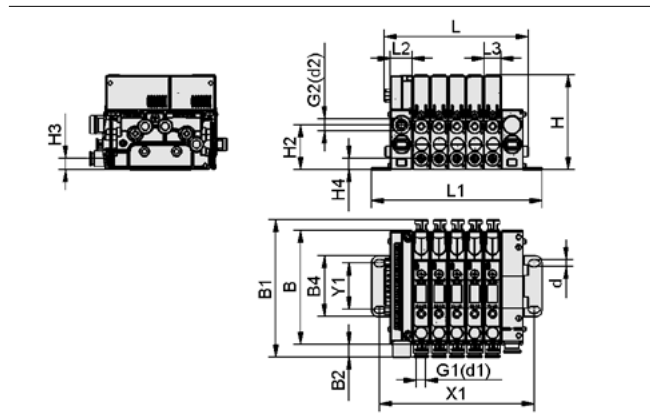
Design Data Compact Terminals SCTM



SCTMb



SCTMc / SCTMi



SCTMc-MP

Type	B [mm]	B1 [mm]	B2 [mm]	B4 [mm]	d [mm]	G1(d1) [mm]	G2(d2) [mm]	H [mm]	H1 [mm]
SCTMb	79.9	97.8	8.9	42.9	4.5	4	8	59.0	64.7
SCTMc / SCTMi	79.9	96.1	9.2	42.9	4.5	6	8	65.8	74.4
SCTMc-MP	79.9	96.1	9.2	42.9	4.5	6	8	66.5	-

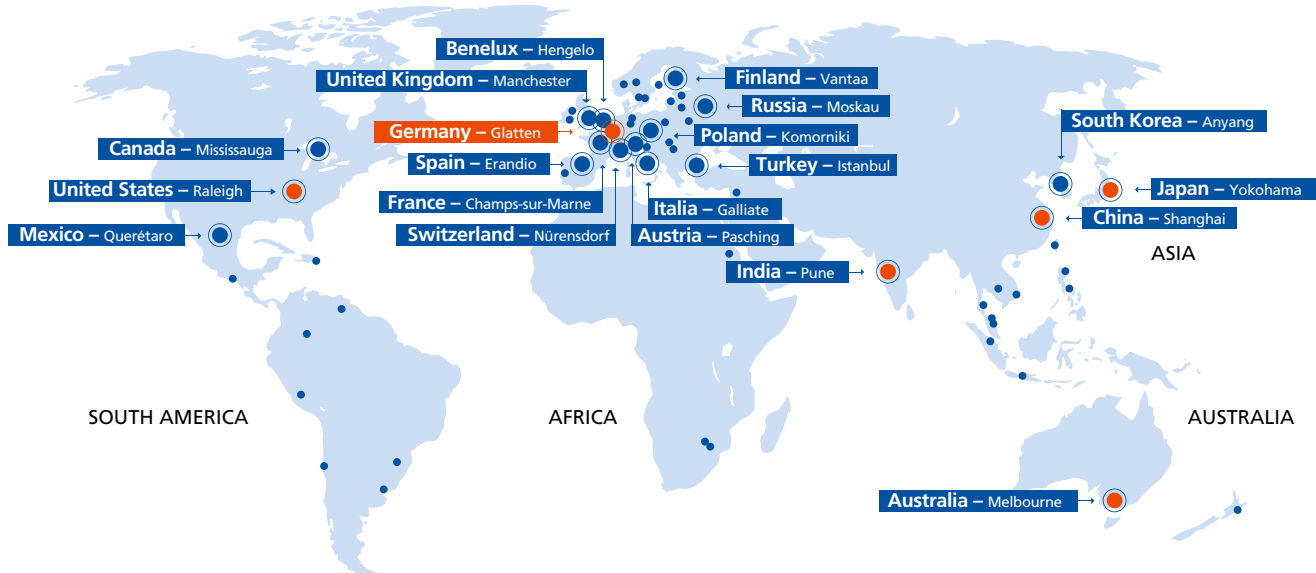
Type	H2 [mm]	H3 [mm]	H4 [mm]	L* [mm]	L1* [mm]	L2 [mm]	L3 [mm]	X1* [mm]	Y1 [mm]
SCTMb	31.5	8	8	100.3	119.3	15	12.5	108.3	32.5
SCTMc / SCTMi	31.5	8	8	100.3	119.3	15	12.5	108.3	32.5
SCTMc-MP	31.5	8	8	101.0	119.3	15	12.5	108.3	32.5

*Specification for terminal with 5 ejector discs. Dimension changes by L3 = 12.5 mm per ejector disc

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