

# STORED ASSORTMENT



# TECHVITAS

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# Pneumatic assortment



**AVENTICS** 

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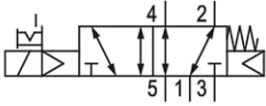

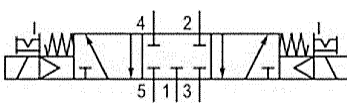

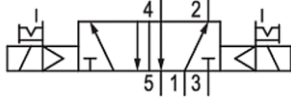
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### PRODUCT GROUPS:

- PNEUMATIC CYLINDERS
- SOLENOID VALVES, MECHANICAL AND MANUAL VALVES
- AIR PREPARATION EQUIPMENT
- FLOW CONTROL EQUIPMENT
- FITTINGS AND TUBING



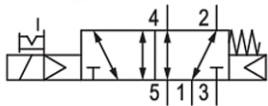

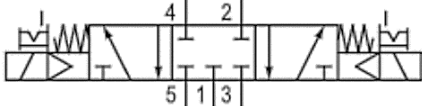

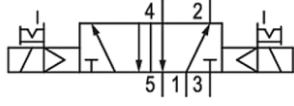








**SOLENOID-OPERATED VALVE, SERIES TC08**

	 	 	 
	Part No.	<b>0820060026</b>	<b>0820061001</b>
Nominal flow Q <sub>n</sub>	800 l/min	700 l/min	800 l/min
Compressed air connection input/output	G 1/8 G 1/8		
Working pressure min./max.	3 ... 10 bar		2 ... 10 bar
Control pressure min./max.	3 ... 10 bar		2 ... 10 bar
Typ. switch-on, switch-off time	14 ms, 17 ms	10 ms, 11 ms	10 ms
Pilot	internal		
Operating voltage	24 VDC		

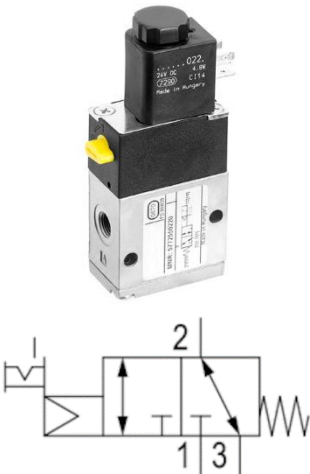
Accessories	Description	Part No.
	Electrical connector, M12x1,5	<b>1834484187</b>
	G 1/8-4	<b>2121004180</b>
	G 1/8-6	<b>2121006180</b>
	G 1/8-8	<b>2121008180</b>
	G 1/8-4	<b>2122004180</b>
	G 1/8-6	<b>2122006180</b>
	G 1/8-8	<b>2122008180</b>
	Silencer, G 1/8	<b>1827000000</b>
	Throttle valve, G 1/8	<b>0821201102</b>
	Compressed air PUR tubing, Ø 4 mm	<b>R412007825</b>
	Compressed air PUR tubing, Ø 6 mm	<b>R412007828</b>
	Compressed air PUR tubing, Ø 8 mm	<b>R412007831</b>

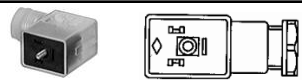
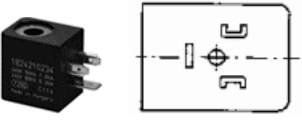





**SOLENOID-OPERATED VALVE, SERIES TC15**

	 	 	 
	<b>Part No.</b>	<b>0820058026</b>	<b>0820059001</b>
Nominal flow Q <sub>n</sub>	1500 l/min	1300 l/min	1500 l/min
Compressed air connection input/output	G 1/4 G 1/4		
Working pressure min./max.	3 ... 10 bar		2 ... 10 bar
Control pressure min./max.	3 ... 10 bar		2 ... 10 bar
Typ. switch-on, switch-off time	12 ms, 35 ms	12 ms, 13 ms	10 ms
Pilot	internal		
Operating voltage	24 VDC		







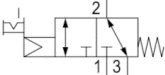

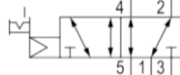

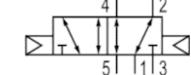
Accessories	Description	Part No.
	Electrical connector, M12x1,5	<b>1834484187</b>
	G 1/4-6	<b>2121006140</b>
	G 1/4-8	<b>2121008140</b>
	G 1/4-10	<b>2121010140</b>
	G 1/4-6	<b>2122006140</b>
	G 1/4-8	<b>2122008140</b>
	G 1/4-10	<b>2122010140</b>
	Silencer, G 1/4	<b>1827000001</b>
	Throttle valve, G 1/4	<b>0821201103</b>
	Compressed air PUR tubing, Ø 6 mm	<b>R412007828</b>
	Compressed air PUR tubing, Ø 8 mm	<b>R412007831</b>
	Compressed air PUR tubing, Ø 10 mm	<b>R412007834</b>









## SOLENOID-OPERATED VALVE, SERIES CD04

	Part No.	<b>577255302</b>
	Nominal flow Q <sub>n</sub>	900 l/min
	Activation	Electrically
	Pilot	Internal
	Operating voltage	Basic valve without coil
	Compressed air connection input/output	G1/8
	Working pressure min./max.	3 ... 10 bar
	Control pressure min./max.	3 ... 10 bar
	Ambient temperature min./max.	-15 ... 50 °C
	Medium temperature min./max.	-15 ... 50 °C
	Medium	Compressed air
	Max. particle size	50 µm
	Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
	Protection class, with connection	IP65
Weight	0,25 kg	
Electrical connection	Plug, EN 175301-803, form B	

Accessories	Description	Part No.
	Electrical connector, M16x1,5	<b>1834484096</b>
	Coil, 24VDC	<b>1824210243</b>
	Coil, 230VAC	<b>1824210235</b>
	G 1/8-4	<b>2121004180</b>
	G 1/8-6	<b>2121006180</b>
	G 1/8-8	<b>2121008180</b>
	G 1/8-4	<b>2122004180</b>
	G 1/8-6	<b>2122006180</b>
	G 1/8-8	<b>2122008180</b>
	Silencer, G 1/8	<b>1827000000</b>
	Screw plug, G 1/8	<b>1823462028</b>
	Compressed air PUR tubing, Ø 4 mm	<b>R412007825</b>
	Compressed air PUR tubing, Ø 6 mm	<b>R412007828</b>
	Compressed air PUR tubing, Ø 8 mm	<b>R412007831</b>


**SOLENOID-OPERATED VALVES**






					
					
Part No.	<b>5772075302</b>	<b>5776845302</b>	<b>5776965302</b>	<b>5776605302</b>	<b>5776625302</b>
Nominal flow Qn	1400 l/min	1200 l/min			
Activation	electrically				
Pilot	internal				
Operating voltage	Basic valve without coil				
Compressed air connection input/output	G1/4				
Working and control pressure min./max.	3 ... 10 bar		3,5 ... 10 bar	3 ... 10 bar	2 ... 10 bar
Ambient temperature min./max.	-25 ... 50 °C	-40 ... 50 °C		-25 ... 50 °C	
Medium temperature min./max.	-25 ... 50 °C	-40 ... 50 °C		-25 ... 50 °C	
Medium	Compressed air				
Max. particle size	50 µm				
Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>				
Pilot control exhaust	with directional pilot air exhaust				
Connector standard	EN 175301-803:2006, form A				
Weight	0,54 kg	0,75 kg	0,57 kg	0,6 kg	0,8 kg

Accessories	Description	Part No.
	Electrical connector, M16x1,5	<b>1834484059</b>
	Coil, 24 VDC, 2,7W	<b>5420897022</b>
	Coil, 230 VAC, 8VA	<b>1824210220</b>
	G 1/4-6	<b>2121006140</b>
	G 1/4-8	<b>2121008140</b>
	G 1/4-10	<b>2121010140</b>
	G 1/4-6	<b>2122006140</b>
	G 1/4-8	<b>2122008140</b>
	G 1/4-10	<b>2122010140</b>
	Silencer, G 1/4	<b>1827000001</b>
	Throttle valve, G 1/4	<b>0821201103</b>
	Screw plug, G 1/4	<b>1823462029</b>
	Compressed air tubing, Ø 6 mm	<b>R412007828</b>
	Compressed air tubing, Ø 8 mm	<b>R412007831</b>
	Compressed air tubing, Ø 10 mm	<b>R412007834</b>



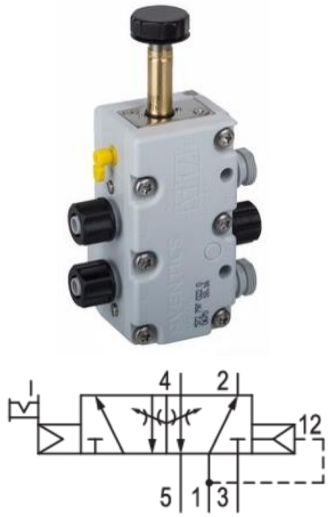
**SOLENOID-OPERATED VALVE, SERIES 589**






	Part No.	<b>5894400220</b>	<b>5894600220</b>
	Nominal flow Qn	520 l/min	750 l/min
	Compressed air connection input/output	Input Ø 6, output Ø 6, exhaust Ø 8	Ø 8
	Activation	Electrically	
	Pilot	Internal	
	Operating voltage	24 VDC	
	Working pressure min./max.	3 ... 8 bar	
	Ambient temperature min./max.	-15 ... 50 °C	
	Medium temperature min./max.	-15 ... 50 °C	
	Medium	Compressed air	
	Max. particle size	5 µm	
	Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>	
	Version	Poppet valve	
	Protection class, with connection	IP65	
	Typical switch-on time	18 ms	
	Typical switch-off time	16 ms	
Weight	0,093 kg		
Electrical connection	Plug, ISO 15217, form C		

Accessories	Description	Part No.
	Electrical connector, M12x1,5	<b>1834484187</b>
	Silencer, Ø 6	<b>R412007899</b>
	Silencer, Ø 8	<b>R412007520</b>
	End plug, Ø 6	<b>2123206000</b>
	End plug, Ø 8	<b>2123208000</b>
	Magnet system, 24 VDC	<b>5420930220</b>
	Magnet system, 230 VAC	<b>5420935280</b>
	Compressed air PUR tubing, Ø 6 mm	<b>R412007828</b>
	Compressed air PUR tubing, Ø 8 mm	<b>R412007831</b>








5/2-directional valve, Series 740-BV

	Part No.	<b>R412009690</b>
	Nominal flow Q <sub>n</sub>	700 l/min
	Activation	electrically
	Pilot	internal
	Operating voltage	Basic valve without coil
	Compressed air connection input/output	Ø 8
	Working pressure min./max.	1,5 ... 10 bar
	Ambient temperature min./max.	-25 ... 50 °C
	Medium temperature min./max.	-25 ... 50 °C
	Medium	Compressed air
	Max. particle size	50 µm
	Oil content of compressed air	0 ... 5 mg/m <sup>3</sup>
	Version	Diaphragm poppet valve
	Protection class, with connection	IP65
	Typical switch-on time	16 ms
	Typical switch-off time	35 ms
Weight	0,221 kg	
Electrical connection	Plug, EN 175301-803, form A	



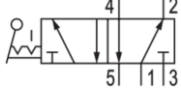

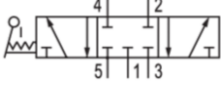

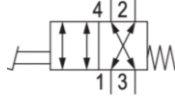

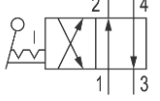
Accessories	Description	Part No.
	Electrical connector, M16x1,5	<b>1834484059</b>
	Coil, 24 VDC, 2,7W	<b>5420897022</b>
	Coil, 230 VAC, 8VA	<b>1824210220</b>
	Tube nut, M14x1	<b>8919905414</b>
	Silencer	<b>8993809904</b>
	Compressed air tubing, Ø 8 mm	<b>R412007831</b>


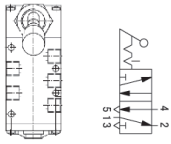
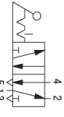

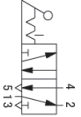
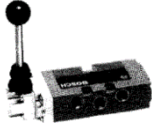
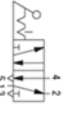

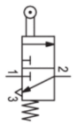
## SOLENOID-OPERATED VALVE, SERIES 840





	Part No.	<b>5728400420</b>
	Nominal flow Q <sub>n</sub>	200 l/min
	Activation	electrically
	Pilot	internal
	Operating voltage	24 VDC
	Compressed air connection input/output	Ø 6
	Working pressure min./max.	1,5 ... 10 bar
	Control pressure min./max.	1,5 ... 10 bar
	Ambient temperature min./max.	-15 ... 50 °C (at max. 8 bar)
	Medium temperature min./max.	-15 ... 50 °C (at max. 8 bar)
	Medium	Compressed air
	Max. particle size	50 µm
	Oil content of compressed air	0 ... 1 mg/m <sup>3</sup>
	Version	Diaphragm poppet valve
	Protection class, with connection	IP65
	Typical switch-on time	17 ms
	Typical switch-off time	19 ms
Weight	0,097 kg	
Electrical connection	Plug, EN 175301-803, form C	

Accessories	Description	Part No.
	Electrical connector, M12x1,5	<b>1834484187</b>
	Silencer	<b>5324002000</b>
	Magnet system, 24 VDC	<b>5420930220</b>
	Magnet system, 230 VAC	<b>5420935280</b>
	Compressed air PUR tubing, Ø 6 mm	<b>R412007828</b>


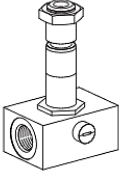
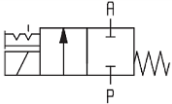
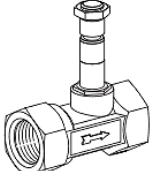
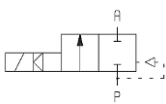
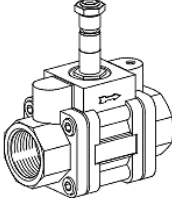
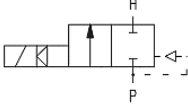
**MECHANICAL OPERATED VALVES**





	 	 	 	 
Part No.	<b>5631310100</b>	<b>5631312100</b>	<b>0820401006</b>	<b>5630180100</b>
Switching principle	5/2	5/3	4/2	4/2
Nominal flow Qn	1100 l/min		550 l/min	300 l/min
Compressed air connection input/output	G 1/4			G 1/8
Actuating control	Hand lever, with detent		Mechanical – pedal	Hand lever, with detent

	 	 	 	 
Part No.	<b>695504</b>	<b>695524</b>	<b>0820401100</b>	<b>0820402102</b>
Switching principle	5/2	5/2	5/2	3/2
Nominal flow Qn	600 l/min	600 l/min	1400 l/min	250 l/min
Compressed air connection input/output	G 1/8	G 1/8	G 1/4	G 1/8
Actuating control	Hand lever, with detent			Roller


Accessories	Description	Part No.
	G 1/8-6	<b>2121006180</b>
	G 1/8-8	<b>2121008180</b>
	G 1/4-6	<b>2121006140</b>
	G 1/4-8	<b>2121008140</b>
	G 1/4-10	<b>2121010140</b>
	Silencer, G 1/8	<b>1827000000</b>
	Silencer, G 1/4	<b>1827000001</b>
	Throttle valve, G 1/8	<b>0821201103</b>
	Throttle valve, G 1/4	<b>0821201103</b>
	Compressed air PUR tubing, Ø 6mm	<b>R412007828</b>
	Compressed air PUR tubing, Ø 8mm	<b>R412007831</b>
	Compressed air PUR tubing, Ø 10mm	<b>R412007834</b>

## SOLENOID-OPERATED VALVES


	 	 	 		
	<b>Part No.</b>	<b>605233</b>	<b>613041</b>	<b>613501</b>	<b>613521</b>
<b>Switching principle</b>	2/2				
<b>Nominal flow Qn</b>	210 l/min	2 m <sup>3</sup> /h	5,6 m <sup>3</sup> /h	7,6 m <sup>3</sup> /h	16,8 m <sup>3</sup> /h
<b>Compressed air connection input/output</b>	G 1/4	G 3/8	G 1/2	G 3/4	G1
<b>Housing</b>	BRASS				
<b>Seal</b>	NBR				
<b>Applications</b>	Compressed air, water, hydraulic oil, neutral gasses				
<b>Medium temperature</b>	From -10°C to +90°C				

Accessories	Description	Part No.
	Coil with electrical connector, 24VDC	<b>720216</b>
	Coil with electrical connector, 230V, 50Hz	<b>720211</b>
	Electrical connector, 24 VDC	<b>720016</b>
	Electrical connector, 230V, 50Hz	<b>720011</b>
	G 1/4-8	<b>2121008140</b>
	G 1/4-10	<b>2121010140</b>
	G 3/8-8	<b>2121008380</b>
	G 3/8-10	<b>2121010380</b>
	G 1/2-10	<b>2121010120</b>
	G 1/2-12	<b>2121012120</b>
	Compressed air PUR tubing, Ø 8mm	<b>R412007831</b>
	Compressed air PUR tubing, Ø 10mm	<b>R412007834</b>
	Compressed air PUR tubing, Ø 12mm	<b>R412007837</b>



**2/2-WAY STOP VALVE, SERIES SC01**

			
Part No.	<b>1823391910</b>	<b>1823391911</b>	<b>1823391912</b>
Valve type	Ball valve		
Housing	Brass		
Working pressure min./max.	0 ... 16 bar		
Compressed air connection 1 and 2	G 1/8	G 1/4	G 3/8
Compressed air connection type 1 and 2	Internal thread		


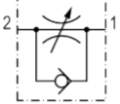
**BALL VALVE, SERIES QR1-BSK**


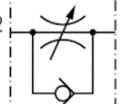
				
Part No.	<b>R412005502</b>	<b>R412005503</b>	<b>R412005504</b>	<b>R412005505</b>
Valve type	Ball valve			
Nominal flow Q <sub>n</sub>	1000 l/min	1550 l/min	2500 l/min	2600 l/min
Working pressure min./max.	-0,95 ... 10 bar			
Compressed air connection 1 and 2	Ø 6	Ø 8	Ø 10	Ø 12
Compressed air connection type 1 and 2	Push-in fitting			


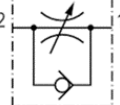
**ISOLATING VALVE QR1-ASC**

				
Part No.	<b>R412005482</b>	<b>R412005483</b>	<b>R412005484</b>	<b>R412005485</b>
Valve type	Poppet valve			
Nominal flow Q <sub>n</sub> 1  2	500 l/min	550 l/min	1500 l/min	1600 l/min
Working pressure min./max.	0 ... 10 bar			
Compressed air connection 1 and 2	Ø 6	Ø 8	Ø 10	Ø 12
Compressed air connection type 1 and 2	Push-in fitting			

## CHECK-CHOKE VALVE, SERIES CC04

 	Part No.	<b>R412010564</b>	<b>R412010565</b>	<b>R412010569</b>
	Housing	Polyamide		
	Q <sub>n</sub> 2 ▶ 1	70 l/min	110 l/min	390 l/min
	Compressed air connection	Ø 4		Ø 6
	Compressed air connection 2	M5	M5	G 1/8
	Air supply/exhaust air throttling	exhaust air throttling		
	Throttle bore Ø	2 mm	2 mm	3.5 mm



 	Part No.	<b>R412010570</b>	<b>R412010572</b>
	Housing	Polyamide	
	Q <sub>n</sub> 2 ▶ 1	470 l/min	490 l/min
	Compressed air connection	Ø 8	
	Compressed air connection 2	G 1/8	G 1/4
	Air supply/exhaust air throttling	exhaust air throttling	
	Throttle bore Ø	3.5 mm	4.5 mm

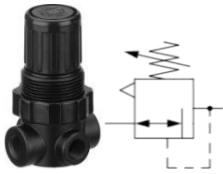
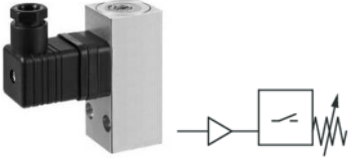
 	Part No.	<b>R412010573</b>	<b>R412010575</b>	<b>R412010577</b>	<b>R412010578</b>
	Housing	Polyamide			
	Q <sub>n</sub> 2 ▶ 1	520 l/min	900 l/min	1530 l/min	1850 l/min
	Compressed air connection	Ø 10		Ø 12	
	Compressed air connection 2	G 1/4	G 3/8	G 1/2	G 1/2
	Air supply/exhaust air throttling	exhaust air throttling			
	Throttle bore Ø	4,5 mm		6,6 mm	

## THROTTLE VALVE WITH SILENCER, SERIES CH02



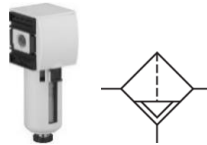

 	Part No.	<b>0821201102</b>	<b>0821201103</b>	<b>0821201104</b>	<b>0821201105</b>
	Housing	Brass			
	Nominal flow Q <sub>n</sub>	700 l/min	1700 l/min	3100 l/min	4100 l/min
	Silencer material	Stainless steel			
	Compressed air connection	G 1/8	G 1/4	G 3/8	G 1/2
	Compressed air connection type	external thread			

**PRESSURE GAUGE, SERIES PG1-SAS**

				
	Part No.	<b>R412003856</b>	<b>R412003857</b>	<b>R412004417</b>
	Compressed air connection	G 1/8	G 1/8	G 1/4
	Range of application	0 ... 4 bar	0 ... 8 bar	0 ... 8 bar
	Display range	0 ... 6 bar	0 ... 10 bar	0 ... 10 bar
Nominal diameter	40 mm	40 mm	50 mm	





<b>PRESSURE REGULATOR, SERIES MU1-RGS</b>		<b>PRESSURE SWITCH, SERIES PM1</b>	
			
<b>0821302426</b>		<b>R412010713</b>	
Adjustment range min./max.	0,15 ... 7 bar	Operating pressure	0,2 ... 16 bar
Port	G 1/8	Version	Mechanical - spring-loaded bellows, adjustable
Flow Qn	450 l/min	Compressed air connection	Internal thread, G 1/4
Activation	Mechanical	Ambient temperature min./max.	-20 ... 80 °C

**STANDARD FILTERS, SERIES AS1-FLS, AS2-FLS, AS3-FLS**





						
	Part No.	<b>R412014600</b>	<b>R412006009</b>	<b>R412007009</b>		
	Filter porosity	5 µm				
	Port	G 1/4	G 3/8	G 1/2		
	Qn	1000 l/min	2100 l/min	3500 l/min		
	Working pressure min./max.	1,5 ... 12 bar	1,5 ... 16 bar	1,5 ... 16 bar		
	Reservoir	Polycarbonate				
	Air supply	From left				
Condensate drain	Semi-automatic, open without pressure					








**OIL-MIST LUBRICATORS, SERIES AS1-LBM, AS2-LBM, AS3-LBM**

			
Part No.	<b>R412014624</b>	<b>R412006231</b>	<b>R412007231</b>
Type of filling	Manual oil filling	Semi-automatic oil filling during operation, manual oil filling	
Compressed air connection	G 1/4	G 3/8	G 1/2
Nominal flow Qn	1400 l/min	3100 l/min	8000 l/min
Working pressure min./max.	0,8 ... 12 bar	0,5 ... 16 bar	
Reservoir	Polycarbonate		
Air supply	From left		






**MAINTENANCE UNITS, SERIES AS1-ACD, AS2-ACD, AS3-ACD**

			
Part No.	<b>R412014672</b>	<b>R412006307</b>	<b>R412007307</b>
Filter porosity	5 µm		
Port	G 1/4	G 3/8	G 1/2
Nominal flow Qn	700 l/min	2000 l/min	3500 l/min
Working pressure min./max.	1,5 ... 12 bar	1,5 ... 16 bar	1,5 ... 16 bar
Reservoir	Polycarbonate		
Air supply	From left		
Condensate drain	Semi-automatic, open without pressure		





**PRESSURE REGULATORS, SERIES AS1-RGS, AS2-RGS, AS3-RGS**

				
Part No.	<b>R412014629</b>	<b>R412006109</b>	<b>R412006121</b>	<b>R412007121</b>
Compressed air connection	G 1/4	G 1/4	G 3/8	G 1/2
Nominal flow Qn	1000 l/min	2200 l/min	2700 l/min	5200 l/min
Working pressure min./max.	0,5 ... 12 bar	0,5 ... 16 bar		
Adjustment range min./max.	0,5 ... 10 bar	0,5 ... 10 bar		
Activation	Manual	Mechanical		
Pressure gauge	With integrated pressure gauge	With pressure gauge		
Air supply	From left			





**FILTER PRESSURE REGULATORS, SERIES AS1-FRE, AS2-FRE, AS3-FRE**

				
Part No.	<b>R412014645</b>	<b>R412006209</b>	<b>R412007209</b>	<b>R412007210</b>
Compressed air connection	G 1/4	G 3/8	G 1/2	
Nominal flow Q <sub>n</sub>	1000 l/min	2600 l/min	5100 l/min	
filter porosity	5 μm			
Condensate drain	semi-automatic, open without pressure			fully automatic, open without pressure
Working pressure min./max.	1,5 ... 12 bar	1,5 ... 16 bar		
Adjustment range min./max.	0,5 ... 8 bar	0,5 ... 8 bar		
Protective guard	-	Polyamide		





**3/2-SHUT-OFF VALVE, SERIES AS1-BAV, AS2-BAV, AS3-BAV**

			
Part No.	<b>R412014664</b>	<b>R412006261</b>	<b>R412007261</b>
Flow Q <sub>n</sub> 1 → 2	2600 l/min	2000 l/min	4500 l/min
Flow Q <sub>n</sub> 2 → 3	380 l/min	380 l/min	3200 l/min
Compressed air connection input/output	G 1/4	G 3/8	G 1/2
Exhaust	G 1/4	G 1/4	G 1/2
Working pressure min./max.	0 ... 12 bar	0 ... 16 bar	
Ambient temperature min./max.	-10 ... 50 °C		
Actuating element	Rotary switch		





**MOUNTING PLATES, SERIES AS1-MBR, AS2-MBR, AS3-MBR**

			
Part No.	<b>R412014755</b>	<b>R412006368</b>	<b>R412007368</b>
Compatible	With AS1 series blocks	With AS2 series blocks	With AS3 series blocks
Material	Steel		



**BLOCK ASSEMBLY KITS**

			
Part No.	<b>R412014758</b>	<b>R412006371</b>	<b>R412007371</b>
Compatible	With AS1 series blocks	With AS2 series blocks	With AS3 series blocks
Sealing material	Acrylonitrile butadiene rubber		
Material	Polyamide		



**MOUNTING CLIPS**

			
Part No.	<b>R412006370</b>	<b>R412007370</b>	<b>R412007367</b>
Compatible	With AS2 series blocks	With AS3 series blocks	With AS3 series blocks
Sealing material	Acrylonitrile butadiene rubber		
Material	Polyamide		Die cast zinc



**OIL**

	
Part No.	<b>8982000010</b>
Type	Oil
Volume	1 liter
Viscosity class	35.9 cSt
Operation	For cylinders and valves


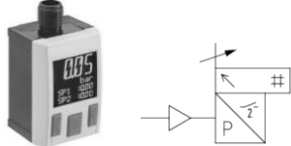


**MAGNETIC PROXIMITY SENSOR, SERIES ST6**

		
	Part No.	<b>R412022869</b>
	Slot width	6 mm T-slot
	Switching logic	NO (make contact)
	Cable	3-pin, 3 m, open cable ends


**PRESSURE SWITCH, SERIES PM1**

		
	Part no.	<b>R412010713</b>
	Version	Mechanical - spring-loaded bellows, adjustable
	Operating pressure	0,2 ... 16 bar
	Compressed air connection	Internal thread, G 1/4
	Ambient temperature min./max.	-20 ... 80 °C

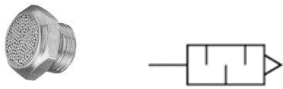
**ELECTRONIC PRESSURE SENSOR, SERIES PE5**

		
	Part No.	<b>R412010767</b>
	Version	electronic
	Operating pressure	0 ... 10 bar
	Compressed air connection	Internal thread, G 1/4
	Ambient temperature min./max.	0 ... 60 °C
	Output signal digital	2 outputs-PNP, NPN, Push-pull
Accessories	CONNECTING CABLE, SERIES CON-RD	
		
	Part No.	<b>R419800109</b>
	Protection class	IP67
	Cable length	2.5 m
	Socket	Socket, M12x1, 5-pin, A-coded, angled


## SILENCERS, SERIES SI1

				
Part No.	<b>1827000000</b>	<b>1827000001</b>	<b>1827000002</b>	<b>1827000003</b>
Compressed air connection	G 1/8	G 1/4	G 3/8	G 1/2
Nominal flow Q <sub>n</sub>	1500 l/min	2900 l/min	5900 l/min	7100 l/min
Sound pressure level	75 dB	79 dB	84 dB	90 dB
Working pressure min./max.	0 ... 10 bar			
Material	Sintered bronze			

## SILENCERS, SERIES SI1

				
Part No.	<b>1827000031</b>	<b>1827000033</b>	<b>1827000034</b>	<b>1827000035</b>
Compressed air connection	G 1/8	G 1/4	G 3/8	G 1/2
Nominal flow Q <sub>n</sub>	640 l/min	900 l/min	1750 l/min	2000 l/min
Sound pressure level	85 dB	88 dB	90 dB	85 dB
Working pressure min./max.	0 ... 10 bar			
Material	Sintered bronze			

## SILENCERS, SERIES SI1

		
Part No.	<b>R412007899</b>	<b>R412007520</b>
Compressed air connection	Ø 6	Ø 8
Nominal flow Q <sub>n</sub>	583 l/min	1185 l/min
Sound pressure level	82 dB	90 dB
Working pressure min./max.	0 ... 10 bar	
Material	Polyethylene	

## STRAIGHT FITTINGS

### SERIES QR1-S-RPN

Compressed air connection port D - push-in fitting;  
Compressed air connection port G - external thread;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2121004050	M5	Ø 4
2121004180	G 1/8	
2121006050	M5	Ø 6
2121006180	G 1/8	
2121006140	G 1/4	
2121008180	G 1/8	Ø 8
2121008140	G 1/4	
2121008380	G 3/8	
R412005001	G 1/2	
2121010140	G 1/4	Ø 10
2121010380	G 3/8	
2121010120	G 1/2	
2121012140	G 1/4	Ø 12
2121012380	G 3/8	
2121012120	G 1/2	
R412005006	G 1/2	Ø16

### SERIES QR1-S-RAI

Compressed air connection port D - push-in fitting; Compressed air connection port G - Internal thread; Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C

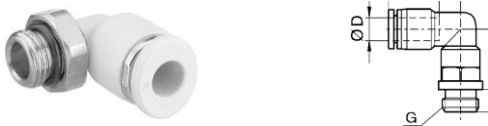


Part No.	Port G	Port D
2121906180	G 1/8	Ø 6
2121906140	G 1/4	
2121908180	G 1/8	Ø 8
2121908140	G 1/4	
R412005089	G 1/4	Ø 10
R412005090	G 1/2	
2121912120	G 1/2	Ø 12

## ELBOW FITTINGS

### SERIES QR1-S-RVT

Compressed air connection port G - external thread;  
Compressed air connection port D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2122004050	M5	Ø 4
2122004180	G1/8	
2122006050	M5	Ø 6
2122006180	G1/8	
2122006140	G1/4	
2122008180	G1/8	Ø 8
2122008140	G1/4	
2122010140	G 1/4	Ø 10
2122010380	G 3/8	
2122010120	G 1/2	
2122012380	G3/8	Ø 12
2122012120	G1/2	
2122014120	G1/2	Ø 14
R412005098	G1/2	Ø 16

### ELBOW UNION, SERIES QR1-S-RVK

Compressed air connection port G and D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2121204000	Ø 4	Ø 4
2121206000	Ø 6	Ø 6
2121208000	Ø 8	Ø 8
2121210000	Ø 10	Ø 10
2121212000	Ø 12	Ø 12
2121214000	Ø 14	Ø 14
R412005033	Ø 16	Ø 16



### Y-FITTING, SERIES QR1-S-RAY

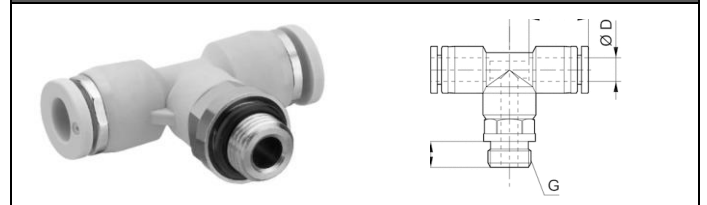
Compressed air connection port G - external thread;  
Compressed air connection port D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2122406180	G1/8	Ø 6
2122408180	G1/8	Ø 8
2122408140	G1/4	
2122410140	G1/4	Ø 10
2122410380	G3/8	
2122410120	G1/2	Ø 12
2122412120	G1/2	

### T-UNION, SERIES QR1-S-RTT

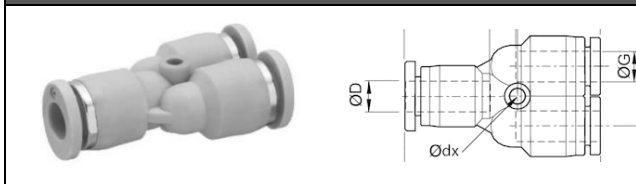
Compressed air connection port G - external thread;  
Compressed air connection port D - push-in fitting; Working  
pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2122206180	G1/8	Ø 6
2122208180	G1/8	Ø 8
2122208140	G1/4	
2122210140	G1/4	Ø 10
2122210380	G3/8	
2122210120	G1/2	Ø 12
2122212380	G3/8	
2122212120	G1/2	

### Y-PLUG CONNECTOR, SERIES QR1-S-RYK

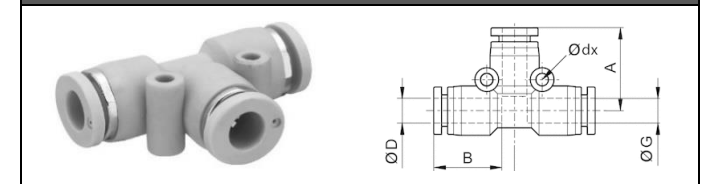
Compressed air connection port G and D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2121804000	Ø 4	Ø 4
2121806000	Ø 6	Ø 6
2121808000	Ø 8	Ø 8
2121810000	Ø 10	Ø 10
2121812000	Ø 12	Ø 12

### T-PLUG CONNECTOR, SERIES QR1-S-RTK

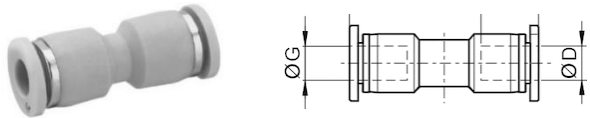
Compressed air connection port G and D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
2121104000	Ø 4	Ø 4
2121106000	Ø 6	Ø 6
2121108000	Ø 8	Ø 8
2121110000	Ø 10	Ø 10
2121112000	Ø 12	Ø 12
R412005025	Ø 16	Ø 16

## PLUG CONNECTOR, SERIES QR1-S-RSK

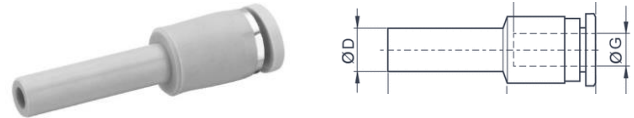
Compressed air connection port G and D - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G	Port D
<b>2121504000</b>	Ø 4	Ø 4
<b>R412005060</b>	Ø 6	
<b>2121506000</b>	Ø 6	Ø 6
<b>R412005062</b>	Ø 8	
<b>2121508000</b>	Ø 8	Ø 8
<b>R412005064</b>	Ø 10	
<b>R412005065</b>	Ø 12	
<b>2121510000</b>	Ø 10	Ø 10
<b>R412005066</b>	Ø 12	
<b>2121512000</b>	Ø 12	Ø 12
<b>R412005067</b>	Ø 16	
<b>2121514000</b>	Ø 14	Ø 14
<b>R412005059</b>	Ø 16	Ø 16

## MALE CONNECTOR, SERIES QR1-S-RED

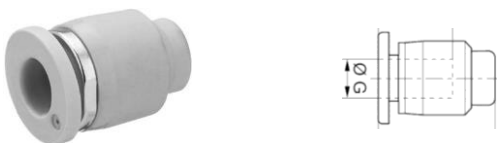
Compressed air connection type port G - push-in fitting;  
Compressed air connection type port D – pin bushing;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port D	Port G
<b>2121706040</b>	Ø 6	Ø 4
<b>2121708060</b>	Ø 8	Ø 6
<b>2121710080</b>	Ø 10	Ø 8
<b>2121712100</b>	Ø 12	Ø 10

## SEALING CAP, SERIES QR1-S-RCA

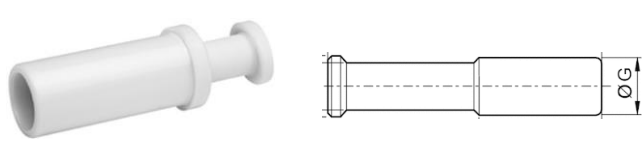
Compressed air connection type port G - push-in fitting;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C



Part No.	Port G
<b>R412005111</b>	Ø 4
<b>R412005112</b>	Ø 6
<b>R412005113</b>	Ø 8
<b>R412005114</b>	Ø 10
<b>R412005115</b>	Ø 12


## END PLUG, SERIES QR1-S-RBS

Compressed air connection type port G - push-in fitting;  
Compressed air connection type port D – pin bushing;  
Working pressure min./max. -0,95 ... 10 bar;  
Ambient temperature min./max. 0 ... 60 °C




Part No.	Port G
<b>2123204000</b>	Ø 4
<b>2123206000</b>	Ø 6
<b>2123208000</b>	Ø 8
<b>2123210000</b>	Ø 10
<b>2123212000</b>	Ø 12
<b>2123214000</b>	Ø 14
<b>R412005331</b>	Ø 16

**SLEEVE, SERIES FPT-S-RSK**

	Part No.	<b>1823300000</b>	<b>1823300001</b>	<b>1823300002</b>	<b>1823300008</b>
	Compressed air connections	G 1/8	G 1/4	G 3/8	G 1/2
	Compressed air connection type	Internal thread			
	Working pressure min./max.	0 ... 16 bar			
	Material	Brass			


**SCREW PLUG, SERIES FPT-S-RBI**

	Part No.	<b>1823462028</b>	<b>1823462029</b>	<b>1823462030</b>	<b>1823462031</b>
	Compressed air connection	G 1/8	G 1/4	G 3/8	G 1/2
	Working pressure min./max.	0 ... 16 bar			
	Material	Steel, galvanized			
	Seal material	Polyvinyl chloride			


**REDUCING NIPPLE, SERIES FPT-S-RDZ**

					
Part No.	<b>1823391012</b>	<b>1823391013</b>	<b>1823391014</b>	<b>1823391028</b>	<b>1823391285</b>
Compressed air connection G	G 1/4	G 3/8	G 1/2	G 3/4	G 1
Compressed air connection D	G 1/8	G 1/4	G 3/8	G 1/2	G 3/4
Compressed air connection type G	External thread				
Compressed air connection type D	Internal thread				
Working pressure min./max.	0 ... 60 bar				
Sealing material	Polyvinyl chloride				

**DOUBLE NIPPLE, SERIES FPT-S-RDO**

						
Part No.	<b>1823391015</b>	<b>1823391016</b>	<b>1823391017</b>	<b>1823391018</b>	<b>1823391019</b>	<b>1823391029</b>
Compressed air connection G	G 1/8	G 1/4	G 1/4	G 3/8	G 3/8	G 1/2
Compressed air connection D	G 1/8	G 1/8	G 1/4	G 1/4	G 3/8	G 1/2
Compressed air connection type G	external thread					
Compressed air connection type D	external thread					
Working pressure min./max.	0 ... 16 bar					
Material	Brass					
Sealing material	Polyvinyl chloride					

**T-CONNECTOR, SERIES FPT-S-RTK**

				
Part No.	<b>1823391739</b>	<b>1823391740</b>	<b>1823391741</b>	<b>1823391742</b>
Compressed air connections G	G 1/8	G 1/4	G 3/8	G 1/2
Compressed air connection types G	Internal thread			
Working pressure min./max.	0 ... 16 bar			
Material	Brass			

### CONNECTION ADAPTER, SERIES FPT-S-REN



Part No.	<b>8633051800</b>	<b>2122918140</b>	<b>2122914380</b>	<b>2122938120</b>
Compressed air connection G	M5	G 1/8	G 1/4	G 3/8
Compressed air connection D	G 1/8	G 1/4	G 3/8	G 1/2
Compressed air connection type G	External thread			
Compressed air connection type D	Internal thread			
Working pressure min./max.	0 ... 16 bar			
Material	Brass			
Sealing material	Polyvinyl chloride			

### ELBOW FITTING, SERIES FPT-S-RVK



Part No.	<b>1823391721</b>	<b>1823391722</b>	<b>1823391723</b>	<b>1823391724</b>
Compressed air connections G	G 1/8	G 1/4	G 3/8	G 1/2
Compressed air connection types G	Internal thread			
Working pressure min./max.	0 ... 16 bar			
Material	Brass			

### COUPLING PLUGS, SERIES CP1-S-NW7,2



Part No.	<b>1823386017</b>	<b>1823386060</b>	<b>1823351016</b>	<b>1823373001</b>
Nominal width	7.2 mm			
Compressed air connection	Ø 8	Ø 10	G 1/4	
Compressed air connection type	Coupling plug			
Working pressure min./max.	0 ... 16 bar			
Housing material	Brass			

### LOCKING COUPLING, SERIES CP1-S-NW7,2



Part No.	<b>1823376001</b>	<b>1823376014</b>	<b>1823376013</b>
Nominal flow Q <sub>n</sub>	1500 l/min		
Nominal width	7.2 mm		
Compressed air connection	G 1/4	G 1/2	G 1/4
Compressed air connection type	External thread		Internal thread
Working pressure min./max.	0 ... 16 bar		
Housing material	Brass		
Seal material	Acrylonitrile butadiene rubber		

### COMPRESSED AIR TUBING, SERIES TU1-E-PUR

	Part No.	External diameter	Wall thickness	Color	Max. working pressure at 20 °C	Note
	<b>R412007825</b>	4 mm	0.75 mm	Blue	8 bar	Sold in meters, minimum order quantity – 1 meter
	<b>R412007828</b>	6 mm	1 mm			
	<b>R412007831</b>	8 mm	1.15 mm			
	<b>R412007834</b>	10 mm	1.25 mm			
	<b>R412007837</b>	12 mm	1.5 mm			


**PUR** - Polyester polyurethane  
External calibrated  
Suitable for dynamic laying  
Halogen-free

### COMPRESSED AIR TUBING, SERIES TU1-S-PUR

	Part No.	External diameter	Wall thickness	Color	Max. working pressure at 20 °C	Note
	<b>R412009985</b>	4	0,75 mm	Blue	10 bar	Sold in meters, minimum order quantity – 50 meter
	<b>R412009988</b>	6	1,05 mm			
	<b>R412009990</b>	8	1,15 mm			
	<b>R412009991</b>	10	1,25 mm			
	<b>R412009992</b>	12	1,5 mm			
	<b>R412004782</b>	14 mm	2 mm	Blue	10 bar	Sold in meters, minimum order quantity - 25 meter
	<b>R412004785</b>	16 mm	2.5 mm			Sold in meters, minimum order quantity - 100 meter

**PUR** - Polyester polyurethane  
External calibrated  
Suitable for dynamic laying  
Halogen-free

### COMPRESSED AIR TUBING, SERIES TU1-S-PET

	Part No.	External diameter	Wall thickness	Color	Max. working pressure at 20 °C	Note
	<b>R412014494</b>	4	0,75 mm	Natural/white	14 bar	Sold in meters, minimum order quantity - 25 meter
	<b>R412014495</b>	6	1 mm		10 bar	
	<b>R412014496</b>	8	1 mm			
	<b>R412014497</b>	10	1,25 mm			
	<b>R412014498</b>	12	1,5 mm			

**PET** - Polyethylene  
Resistant to microbes  
Halogen-free  
Excellent hydrolysis characteristics  
Suitable for dynamic laying  
Suitable for use in food processing

## ES05 valve systems

Simplicity as a principle – flexibility as a concept. The **ES05** Essential Valve System provides you with a new valve concept which sets the standard for cost-optimized, configurable valve systems that meet any demand. Available as a single valve and modular valve system.



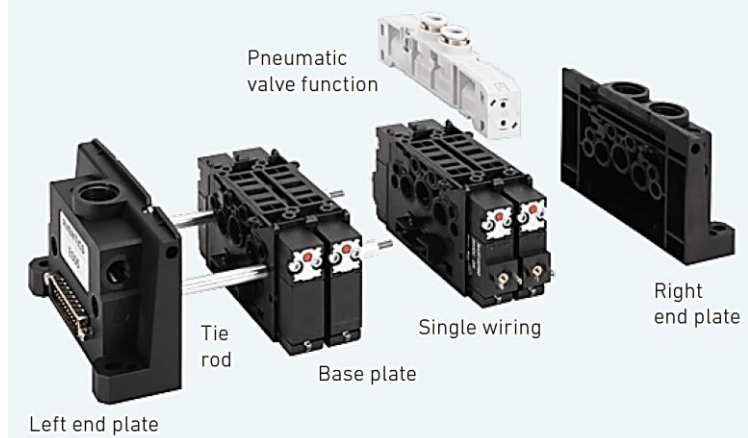
ES05 series	Valve system	Single valve
Functions	5/2 single and double solenoid; 2 x 3/2 NC and NO; 5/3 closed center	
Number of valves	Up to 24 valves in steps of 2	1 valve
Electrical connection	Single wiring (form C industry, M8x1) D-Sub, fieldbus via AES, IO-Link	Single wiring (form C industry, M8x1)
Protection class	IP65 (single wiring) IP50 (D-Sub, fieldbus, IO-Link)	IP65
Switch-on time	< 20 ms	< 20 ms

**UAB Techvitas can configure this ES05 valve system according to your needs!**

### Advantages:

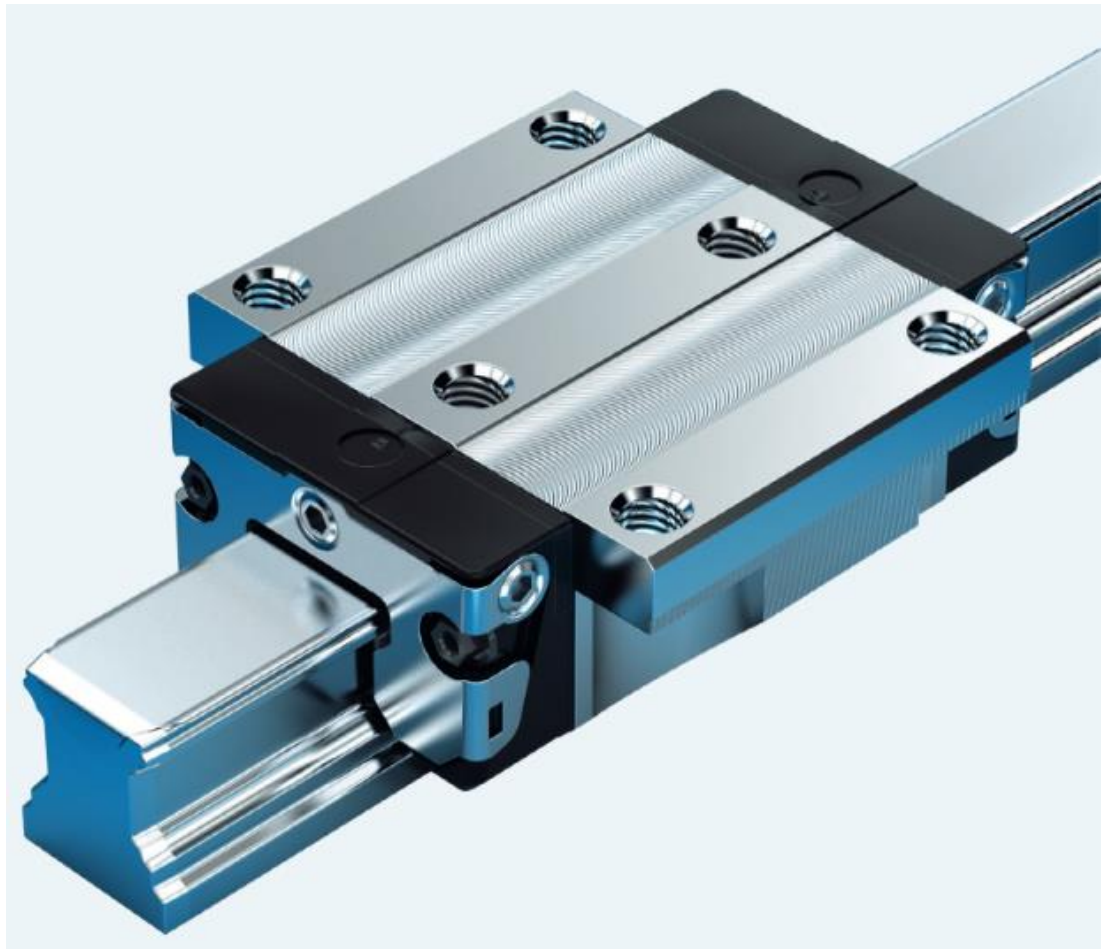
- Easy, quick, and secure assembly
- Quick delivery
- Excellent flexibility, can be adapted at any time
- Low storage costs thanks to optimization of components
- Modular system for easy configuration
- High quality with sophisticated material concept
- Also suitable for use in clean rooms

Quick and easy to assemble with just one tool.





# Ball runner blocks and guide rails assortment



**rexroth**  
A Bosch Company



# The most popular ball runner blocks and guide rails

R1651  
FNS



At Rexroth, we manufacture ball guide rails and ball runner blocks in ball raceways in particular so precisely that it is possible to interchange each individual element at any time. This means that you can combine them in any way you like within each accuracy class.

R1653  
FLS



Highlights:

R1622  
SNS



- The same high load capacities in all four main directions of loading;
- Very low noise level and best travel performance;

R1623  
SLS



- Excellent dynamic characteristics:
  - Speed  $V_{max} \leq 10$  m/s;
  - Acceleration  $a_{max} = 500$  m/s<sup>2</sup>.

R1669  
SKN



- Limitless interchangeability; all guide rail versions can be combined with all runner block versions;
- Long-term lubrication over several years possible;

R1605  
SNS



- 60 % weight saving with aluminum ball runner block (compared to the steel version);

e-catalog version

<https://goo.gl/D7zQy7>



# Explanation of ball runner block codes

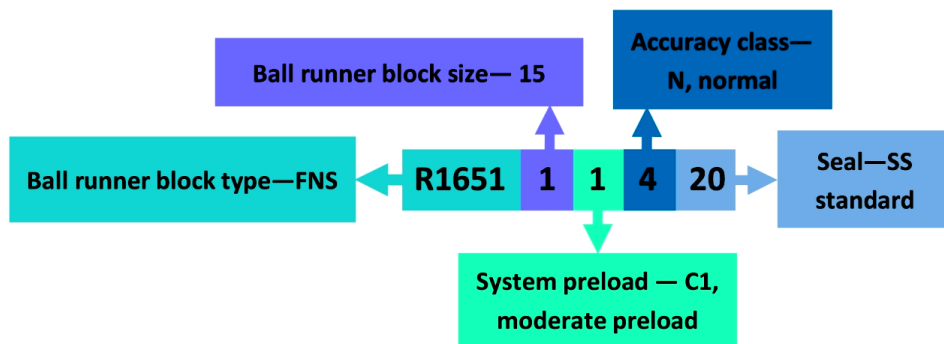
Type	Width	Length	Height	Code numbers
FNS	Flange	Normal	Standard height	R1651
FLS	Flange	Long	Standard height	R1653
SNS	Slimline	Normal	Standard height	R1622
SLS	Slimline	Long	Standard height	R1623
SKN	Slimline	Short	Low profile	R1669

Size	Code numbers
15	Mounted on size 15 guide rail 1
20	Mounted on size 20 guide rail 8
25	Mounted on size 25 guide rail 2
30	Mounted on size 30 guide rail 7
35	Mounted on size 35 guide rail 3
45	Mounted on size 45 guide rail 4

System preload	Code numbers
C0	Without preload (clearance) 9
C1	Moderate preload 1
C2	Average preload 2
C3	High preload 3

Accuracy class	Code numbers
N	Normal accuracy class 4
H	High accuracy class 3
P	Precise accuracy class 2
XP	Extra precise accuracy class 8

Seal	Code numbers
SS	Standard seal 20
LS	Low-friction seals 21
DS	Double-lipped seal 2Z



# The most popular ball runner blocks

	CODE	DESCRIPTION
SIZE 15	R165111420	B.RUNNER BLOCK CS KWD-015-FNS-C1-N-1
	R165311420	B.RUNNER BLOCK CS KWD-015-FLS-C1-N-1
	R162211420	B.RUNNER BLOCK CS KWD-015-SNS-C1-N-1
SIZE 20	R165181320	B.RUNNER BLOCK CS KWD-020-FNS-C1-H-1
	R16518132Z	B.RUNNER BLOCK CS KWD-020-FNS-C1-H-1
	R165381420	B.RUNNER BLOCK CS KWD-020-FLS-C1-N-1
	R162281320	B.RUNNER BLOCK CS KWD-020-SNS-C1-H-1
SIZE 25	R165121420	B.RUNNER BLOCK CS KWD-025-FNS-C1-N-1
	R16512142Z	B.RUNNER BLOCK CS KWD-025-FNS-C1-N-1
	R165122420	B.RUNNER BLOCK CS KWD-025-FNS-C2-N-1
	R16532142Z	B.RUNNER BLOCK CS KWD-025-FLS-C1-N-1
	R165321420	B.RUNNER BLOCK CS KWD-025-FLS-C1-N-1
	R16222142Z	B.RUNNER BLOCK CS KWD-025-SNS-C1-N-1
	R162221420	B.RUNNER BLOCK CS KWD-025-SNS-C1-N-1
	R162323820	B.RUNNER BLOCK CS KWD-025-SLS-C3-X-1
	R166621320	B.RUNNER BLOCK CS KWD-025-SKS-C1-H-1
	R167121320	B.RUNNER BLOCK CS KWD-025-BNS-C1-H-1
	R166922013*	B.RUNNER BLOCK CS KWC-025-SKN-C1-H-2 S
SIZE 30	R165171320	B.RUNNER BLOCK CS KWD-030-FNS-C1-H-1
	R165371420	B.RUNNER BLOCK CS KWD-030-FLS-C1-N-1
	R162271420	B.RUNNER BLOCK CS KWD-030-SNS-C1-N-1
SIZE 35	R165331420	B.RUNNER BLOCK CS KWD-035-FLS-C1-N-1
	R165331320	B.RUNNER BLOCK CS KWD-035-FLS-C1-H-1

\*\* – special ball runner blocks for Homag machines.

## Accessories

CODE	DESCRIPTION
R161912120	FRONT SEAL for 15 size ball runner blocks
R161982120	FRONT SEAL for 20 size ball runner blocks
R161922130	FRONT SEAL for 25 size ball runner blocks
R161972130	FRONT SEAL for 30 size ball runner blocks
R161932130	FRONT SEAL for 35 size ball runner blocks
R341603700	Dynalub 510, NLGI Category 2 lithium-based grease for linear motion systems.

# The most popular guide rails



**SNS** economical ball guide rails with plastic mounting hole plugs.

Rails can be cut in Klaipeda warehouse according to customer specification, maximum length is 3836 mm.

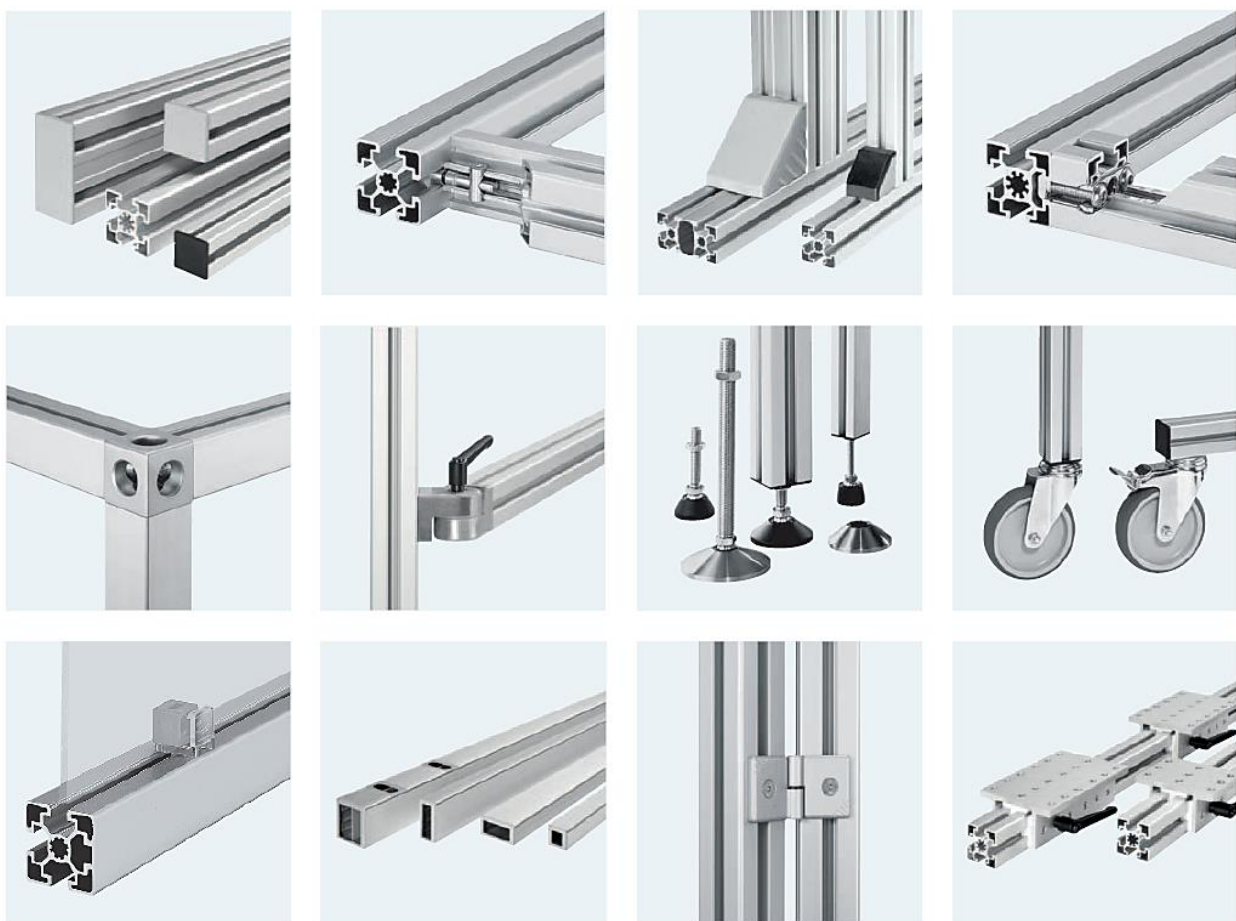
Size 20 – 25 up to 5816 mm being available on request.

Size 30 – 35 up to 5836 mm being available on request.

	CODE	DESCRIPTION
SIZE 15	R160510431S	B.GUIDE RAIL CS KSA-015-SNS-N-MA-AK
SIZE 20	R160580431S	B.GUIDE RAIL CS KSA-020-SNS-N-MA-AK
SIZE 25	R160520431S	B.GUIDE RAIL CS KSA-025-SNS-N-MA-AK
SIZE 30	R160570431S	B.GUIDE RAIL CS KSA-030-SNS-N-MA-AK
SIZE 35	R160530431S	B.GUIDE RAIL CS KSA-035-SNS-N-MA-AK

S letter at the end of the code – UAB Techvitas stock rails.

# Aluminum profiles assortment



**rexroth**  
A Bosch Company

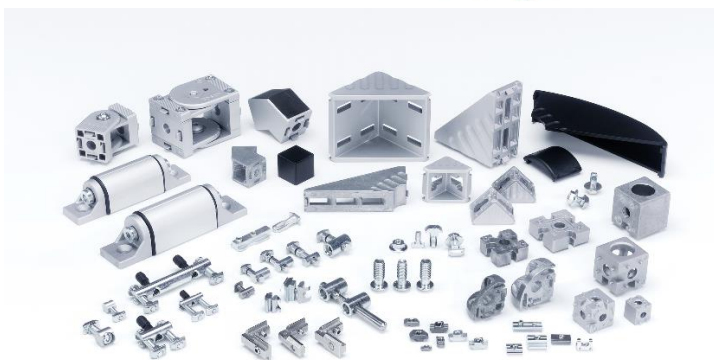
# The versatile comprehensive range

Over 100 different profile cross-sections with perfectly adjusted modular dimensions as well as versatile connection elements and accessories enable you to turn any idea into reality.



**Strong profiles – the economical choice for any load scenario!**

- Light profiles
- Heavy-duty standard profiles
- Profiles with closed slots
- Round profiles for an attractive design
- Innovative special profiles for special applications



**Sturdy connecting systems – the Rexroth connectors hold really firmly and securely!**

- Bracket
- Joints
- Cubic connectors
- Bolt connector
- Quick connector
- ...



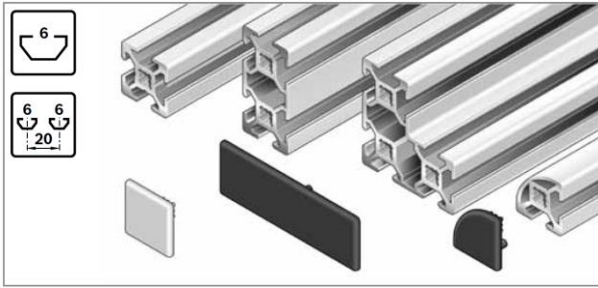
**Matching accessories for the profile system – easy to fix in the profile slot or central hole!**

- Hinges, sliders
- Clamping elements
- Feet and rollers
- Installation and air-supply elements
- Cover and mounting rim profiles
- ...

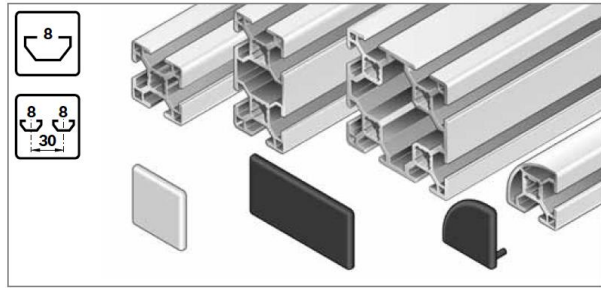


# Strut profiles

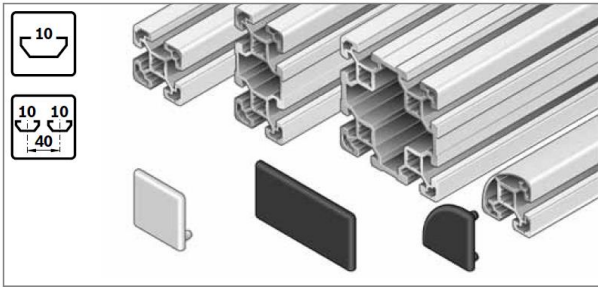
6 mm slot, 20 mm modular dimension



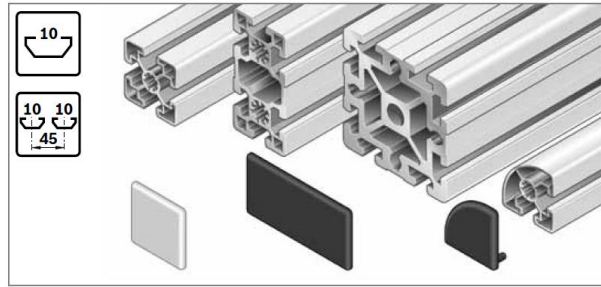
8 mm slot, 30 mm modular dimension



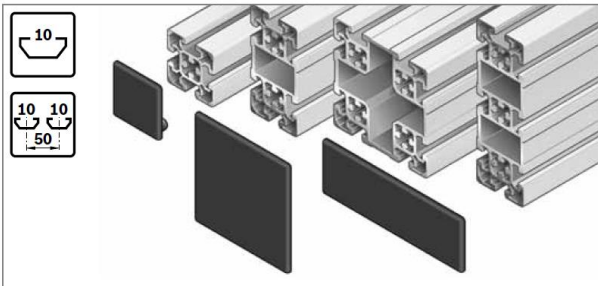
10 mm slot, 40 mm modular dimension



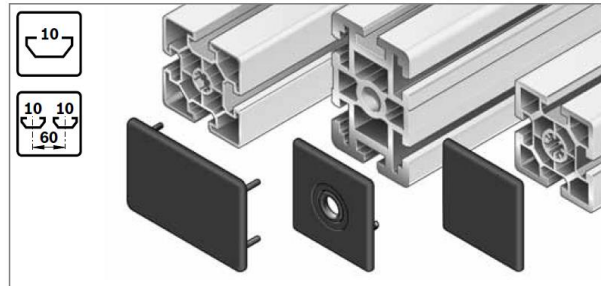
10 mm slot, 45 mm modular dimension



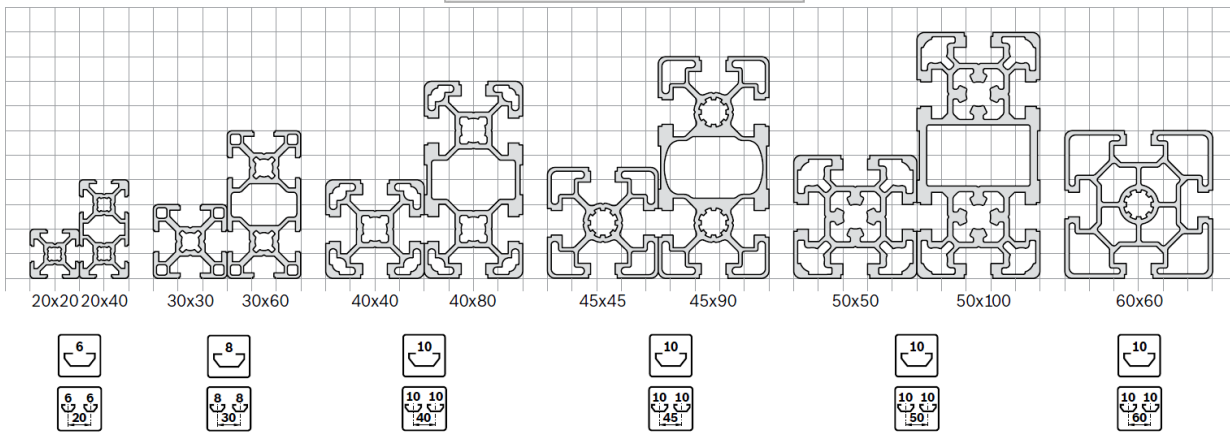
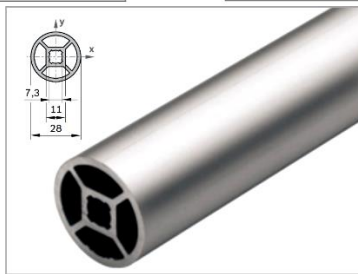
10 mm slot, 50 mm modular dimension



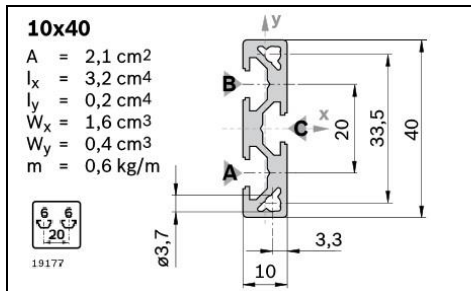
10 mm slot, 60 mm modular dimension



D28

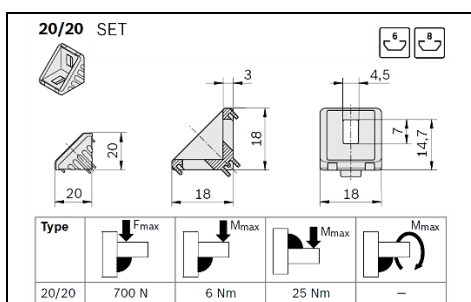


# Profile 10x40

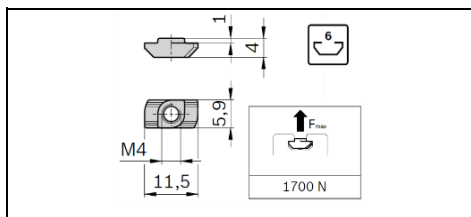


10x40 (3000mm)	Material/color	ESD		Code
Profile 10x40	Aluminum		€/m	3842526817
ESD cap	Black (PP)		20	3842548767
Cap	Gray(PP)		20	3842548766
ESD cover	Anodized aluminum (2m)		10	3842523254

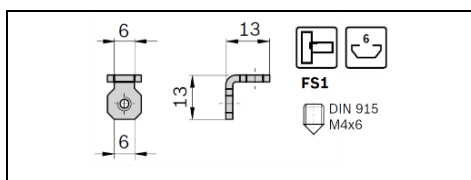
## Accessories:



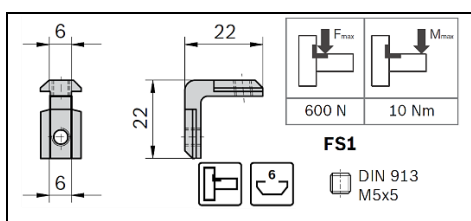
Bracket	Slot	ESD		Code
Set (standard)	6		1	3842523511
ESD cap	Black (PP)		100	3842548843
Cap	Gray(PP)		100	3842548842



T-nut	Slot/thread	ESD		Code
Galvanized steel	6 / M4		100	3842523135



Inner bracket	Slot	ESD		Code
Galvanized steel	6 / 6		10	3842535574



R inner bracket	Slot	ESD		Code
Galvanized steel	6 / 6		10	3842535575



# Profile 20x20

**20x20**

A = 1,6 cm<sup>2</sup>  
 $I_x = 0,7 \text{ cm}^4$   
 $I_y = 0,7 \text{ cm}^4$   
 $W_x = 0,7 \text{ cm}^3$   
 $W_y = 0,7 \text{ cm}^3$   
 $m = 0,4 \text{ kg/m}$

20x20 (3000mm)	Material/color	ESD		Code
Profile 20x20	Aluminum		€/m	3842517179
ESD cap	Black (PP)		20	3842548743
Cap	Gray(PP)		100	3842548742
ESD cover	Anodized aluminum (2m)		10	3842523254

## Accessories:

**20/20 SET**

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
20/20	700 N	6 Nm	25 Nm	—

Bracket	Slot	ESD		Code
Set (standard)	6		1	3842523511
ESD cap	Black (PP)		100	3842548843
Cap	Gray(PP)		100	3842548842

T-nut	Slot/thread	ESD		Code
Galvanized steel	6 / M4		100	3842523135

**FS1**  
DIN 915  
M4x6

Inner bracket	Slot	ESD		Code
Galvanized steel	6 / 6		10	3842535574

**FS1**  
DIN 913  
M5x5

$F_{max}$	$M_{max}$
600 N	10 Nm

R inner bracket	Slot	ESD		Code
Galvanized steel	6 / 6		10	3842535575

# Profile 30x30

**30x30**

$A = 3,1 \text{ cm}^2$   
 $I_x = 2,8 \text{ cm}^4$   
 $I_y = 2,8 \text{ cm}^4$   
 $W_x = 1,8 \text{ cm}^3$   
 $W_y = 1,8 \text{ cm}^3$   
 $m = 0,9 \text{ kg/m}$

19178

30x30 (5600mm)	Material/color	ESD		Code
Profile 30x30	Aluminum		€/m	3842509178
ESD cap	Black (PP)		20	3842548745
Cap	Gray(PP)		100	3842548744
Cover	Gray		10	3842518375
ESD cover	Anodized aluminum (2m)		10	3842523256

Accessories:

**30/30 SET**

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
30/30	1250 N	25 Nm	75 Nm	-

Bracket	Slot	ESD		Code
Set (standard)	8		1	3842523528
ESD cap	Black (PP)		100	3842548847
Cap	Gray(PP)		100	3842548846

Slot	$F_{Tens}$
8 (M6)	4000 N

T-nut	Slot/thread	ESD		Code
Galvanized steel	8 / M4		100	3842501751
Galvanized steel	8 / M5		100	3842501752
Galvanized steel	8 / M6		100	3842501753

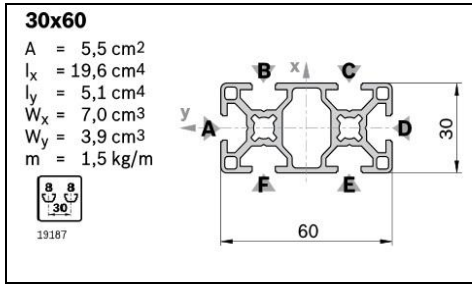
Slot	$F_{max}$	$M_{max}$
8 / 8	2200 N	50 Nm

Inner bracket	Slot	ESD		Code
	8 / 8		10	3842535578

Slot	$F_{max}$	$M_{max}$
8 / 8	2500 N	50 Nm

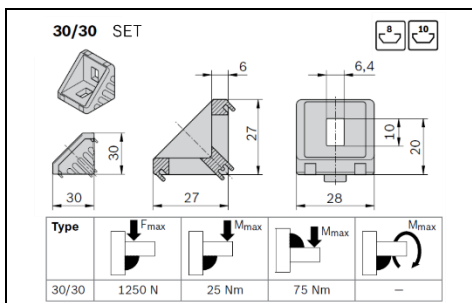
R inner bracket	Slot	ESD		Code
	8 / 8		10	3842535577

# Profile 30x60

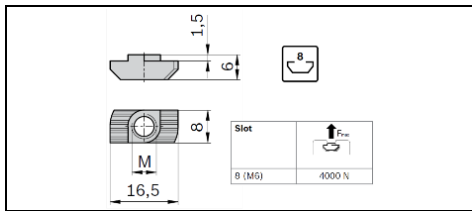


30x60 (5600mm)	Material/color	ESD		Code
Profile 30x60	Aluminum		€/m	3842512603
ESD cap	Black (PP)		20	3842548781
Cap	Gray (PP)		100	3842548780
Cover	Gray		10	3842518375
ESD cover	Anodized aluminum (2m)		10	3842523256

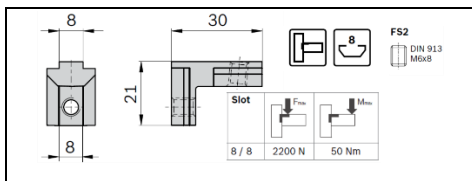
## Accessories:



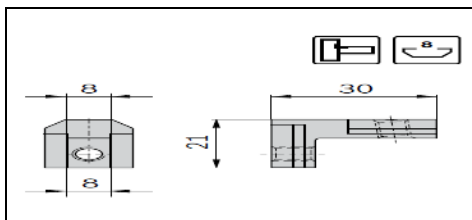
Bracket	Slot	ESD		Code
Set (standard)	8		1	3842523528
ESD cap	Black (PP)		100	3842548847
Cap	Gray (PP)		100	3842548846



T-nut	Slot/thread	ESD		Code
Galvanized steel	8 / M4		100	3842501751
Galvanized steel	8 / M5		100	3842501752
Galvanized steel	8 / M6		100	3842501753



Inner bracket	Slot	ESD		Code
	8 / 8		10	3842535578



R inner bracket	Slot	ESD		Code
	8 / 8		10	3842535577

# Profile 40x40L

**40x40L**

A = 5,6 cm<sup>2</sup>  
 $I_x = 9,1 \text{ cm}^4$   
 $I_y = 9,1 \text{ cm}^4$   
 $W_x = 4,5 \text{ cm}^3$   
 $W_y = 4,5 \text{ cm}^3$   
 $m = 1,5 \text{ kg/m}$

10 10  
40  
19199

40x40L (6070mm)	Material/color	ESD		Code
Profile 40x40L	Aluminum		€/m	3842529339
ESD cap	Black (PP)		20	3842548747
Cap	Gray(PP)		100	3842548746
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

40/40

FS5  
M8x20

Type	F <sub>max</sub>	M <sub>max</sub>	M <sub>max</sub>	M <sub>max</sub>
40/40	3000 N	55 Nm	145 Nm	35 Nm

Bracket	Slot / color	ESD		Code
Standard	10		100	3842528967
T-bolt	M8x20		100	3842528715
Nut	M8		100	3842345081
ESD cap	Black (PP)		20	3842548855
Cap	Gray(PP)		100	3842548854

Slot	F <sub>max</sub>	M <sub>max</sub>
10 (M8)	6000 N	18000 Nm

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

FS3  
DIN 913  
M8x12

Slot	F <sub>max</sub>	M <sub>max</sub>
10 / 10	2800 N	100 Nm

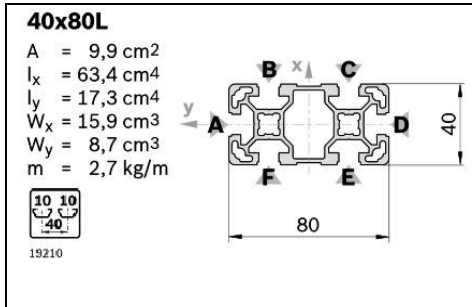
Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

FS4  
DIN 913  
M8x12

Slot	F <sub>max</sub>	M <sub>max</sub>
10 / 10	3000 N	100 Nm

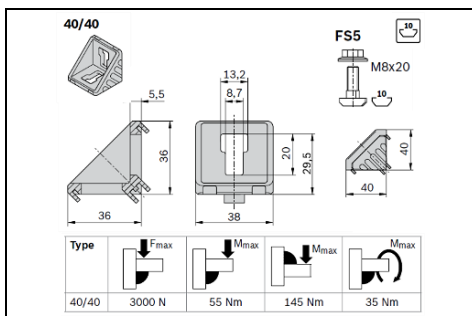
R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile 40x80L

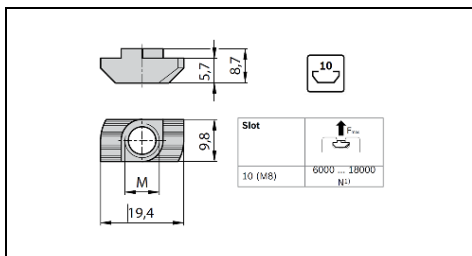


40x80L (6070mm)	Material/color	ESD		Code
Profile 40x80L	Aluminum		€/m	3842529341
ESD cap	Black (PP)		20	3842548749
Cap	Gray (PP)		100	3842548748
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

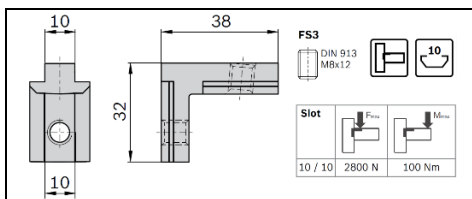
## Accessories:



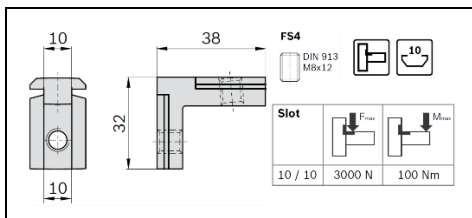
Bracket	Slot/thread	ESD		Code
Standard	10		100	3842528967
T-bolt	M8x20		100	3842528715
Nut	M8		100	3842345081
ESD cap	Black (PP)		20	3842548855
Cap	Gray (PP)		100	3842548854



T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287



Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572



R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile 45x45L

**45x45L**

A = 6,0 cm<sup>2</sup>  
 $I_x = 11,7 \text{ cm}^4$   
 $I_y = 11,7 \text{ cm}^4$   
 $W_x = 5,2 \text{ cm}^3$   
 $W_y = 5,2 \text{ cm}^3$   
 $m = 1,6 \text{ kg/m}$

10 10  
145

18421

45x45L (6070mm)	Material/color	ESD		Code
Profile 45x45L	Aluminum		€/m	3842553611
ESD cap	Black (PP)		20	3842548753
Cap	Gray(PP)		100	3842548752
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

**45/45**

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
45/45	3000 N	60 Nm	160 Nm	-

FS7 M8x25

Bracket	Slot / color	ESD		Code
Standard	10		100	3842523558
T-bolt	M8x25		100	3842528718
Nut	M8		100	3842345081
ESD cap	Black (PP)		100	3842548863
Cap	Gray(PP)		100	3842548862

Slot	$F_{max}$
10 (M8)	6000 ... 18000 (N)

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

FS3 DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	2800 N	100 Nm

Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

FS4 DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	3000 N	100 Nm

R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile 45x45

**45x45**

A = 7,5 cm<sup>2</sup>  
 $I_x = 13,8 \text{ cm}^4$   
 $I_y = 13,8 \text{ cm}^4$   
 $W_x = 6,1 \text{ cm}^3$   
 $W_y = 6,1 \text{ cm}^3$   
 $m = 2,0 \text{ kg/m}$

19432

45x45 (6070mm)	Material/color	ESD		Code
Profile 45x45	Aluminum		€/m	3842553614
ESD cap	Black (PP)		20	3842548753
Cap	Gray(PP)		100	3842548752
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

**45/45**

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
45/45	3000 N	60 Nm	160 Nm	-

FS7 M8x25

Bracket	Slot / color	ESD		Code
Standard	10		100	3842523558
T-bolt	M8x25		100	3842528718
Nut	M8		100	3842345081
ESD cap	Black (PP)		100	3842548863
Cap	Gray(PP)		100	3842548862

Slot	$F_{max}$
10 (M8)	8000 ... 18000 N

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

**FS3** DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	2800 N	100 Nm

Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

**FS4** DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	3000 N	100 Nm

R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571





# Profile 45x90

**45x90**

A = 15,4 cm<sup>2</sup>  
 $I_x = 124,6 \text{ cm}^4$   
 $I_y = 32,8 \text{ cm}^4$   
 $W_x = 27,7 \text{ cm}^3$   
 $W_y = 14,6 \text{ cm}^3$   
 $m = 4,2 \text{ kg/m}$

10 10  
45  
19438

45x90 (6070mm)	Material/color	ESD		Code
Profile 45x90	Aluminum		€/m	3842553615
ESD cap	Black (PP)		20	3842548757
Cap	Gray(PP)		20	3842548756
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

**45/45**

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
45/45	3000 N	60 Nm	160 Nm	-

FS7  
M8x25  
10

Bracket	Slot / color	ESD		Code
Standard	10		100	3842523558
T-bolt	M8x25		100	3842528718
Nut	M8		100	3842345081
ESD cap	Black (PP)		100	3842548863
Cap	Gray(PP)		100	3842548862

Slot	$F_{max}$
10 (M8)	6000 ... 18000 N <sup>1)</sup>

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

FS3  
DIN 913  
M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	2800 N	100 Nm

Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

FS4  
DIN 913  
M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	3000 N	100 Nm

R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile 50x50L

**50x50L**

A = 9,3 cm<sup>2</sup>  
 $I_x = 21,2 \text{ cm}^4$   
 $I_y = 21,2 \text{ cm}^4$   
 $W_x = 8,5 \text{ cm}^3$   
 $W_y = 8,5 \text{ cm}^3$   
 $m = 2,5 \text{ kg/m}$

13454

50x50 (6070mm)	Material/color	ESD		Code
Profile 50x50	Aluminum		€/m	3842529351
ESD cap	Black (PP)		20	3842548821
Cap	Gray(PP)		20	3842548820
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

50/50

Type	$F_{max}$	$M_{max}$	$M_{max}$	$M_{max}$
50/50	4000 N	125 Nm	250 Nm	38 Nm

FS7 M8x25

Bracket	Slot / color	ESD		Code
Standard	10		20	3842530381
T-bolt	M8x25		100	3842528718
Nut	M8		100	3842345081
ESD cap	Black (PP)		100	3842548871
Cap	Gray(PP)		100	3842548870

Slot	$F_{max}$
10 (M8)	6000 - 19000 N

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

FS3

DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	2800 N	100 Nm

Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

FS4

DIN 913 M8x12

Slot	$F_{max}$	$M_{max}$
10 / 10	3000 N	100 Nm

R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile 80x80L

**50x50L**

A = 9,3 cm2  
 $I_x = 21,2 \text{ cm}^4$   
 $I_y = 21,2 \text{ cm}^4$   
 $W_x = 8,5 \text{ cm}^3$   
 $W_y = 8,5 \text{ cm}^3$   
 $m = 2,5 \text{ kg/m}$

13454

80x80L (6070mm)	Material/color	ESD		Code
Profile 80x80L	Aluminum		€/m	3842529347
ESD cap	Black (PP)		20	3842548751
Cap	Gray (PP)		20	3842548750
ESD cover	Black (PP)		10	3842548877
Cover	Anodized aluminum (2m)		10	3842523258

## Accessories:

**50/50**

Type	F <sub>max</sub>	M <sub>max</sub>	M <sub>max</sub>	M <sub>max</sub>
50/50	4000 N	125 Nm	250 Nm	38 Nm

FS7 M8x25

Bracket	Slot / color	ESD		Code
Standard	10		20	3842530231
T-bolt	M8x25		100	3842528718
Nut	M8		100	3842345081
ESD cap	Black (PP)		100	3842548861
Cap	Gray (PP)		100	3842548860

Slot	F <sub>max</sub>
10 (M8)	6000 ... 18000 N <sup>1)</sup>

T-nut	Slot/thread	ESD		Code
Galvanized steel	10 / M4		100	3842530281
Galvanized steel	10 / M5		100	3842530283
Galvanized steel	10 / M6		100	3842530285
Galvanized steel	10 / M8		100	3842530287

**FS3** DIN 913 M8x12

Slot	F <sub>max</sub>	M <sub>max</sub>
10 / 10	2800 N	100 Nm

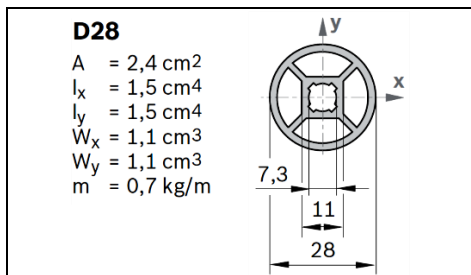
Inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535572

**FS4** DIN 913 M8x12

Slot	F <sub>max</sub>	M <sub>max</sub>
10 / 10	3000 N	100 Nm

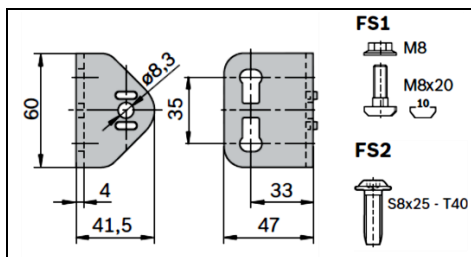
R inner bracket	Slot	ESD		Code
SET	10 / 10		10	3842535571

# Profile D28



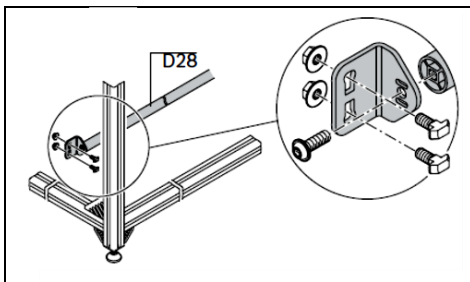
D28 (6070mm)	Material/color	ESD		Code
Profile D28	Aluminum		€/m	3842535118
ESD cap	● Black (PP)		20	3842535835
Cap	● Gray(PP)		20	3842537718

Accessories:

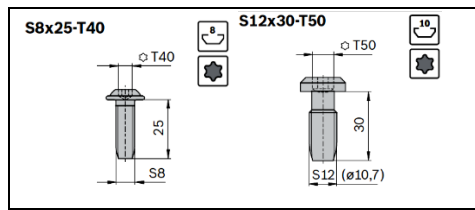


Bracket	ESD		Code
60x47x4 (set: 2xFS1 ir FS2)		20	3842536002

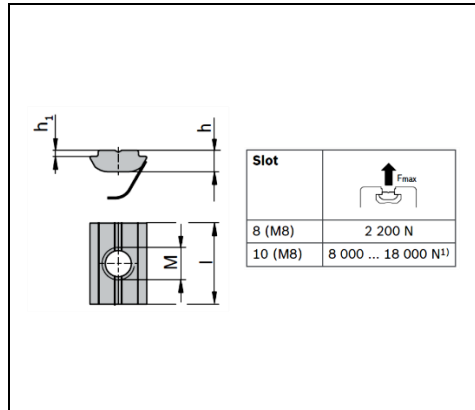
Fitting:



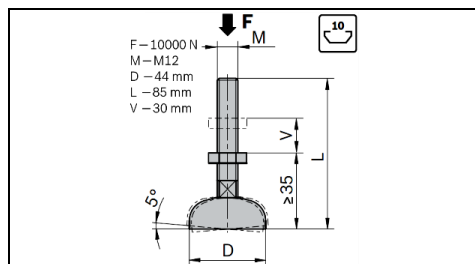
# Accessories



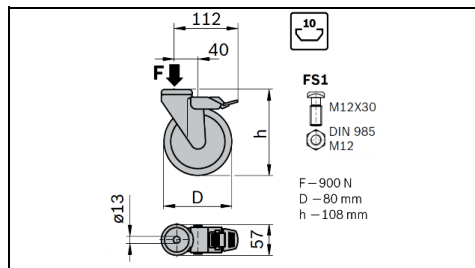
Central bolt (self-tapping)	Thread	ESD		Code
S8x25-T40	M8		100	3842535118
S12x30-T50	M12		100	3842530236



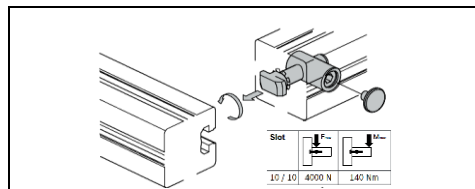
Swivel-in sliding block with spring	Material	Item size	ESD		Code
	Steel, galvanized	8 M6		100	3842529296
		8 M8		100	3842529297
		10 M5		100	3842529298
		10 M6		100	3842529299
		10 M8		100	3842529300



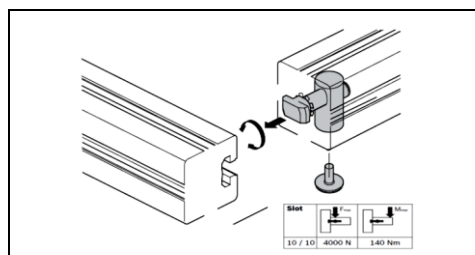
Leveling foot	Thread	ESD		Code
D44 M12X85	M12		20	3842352061



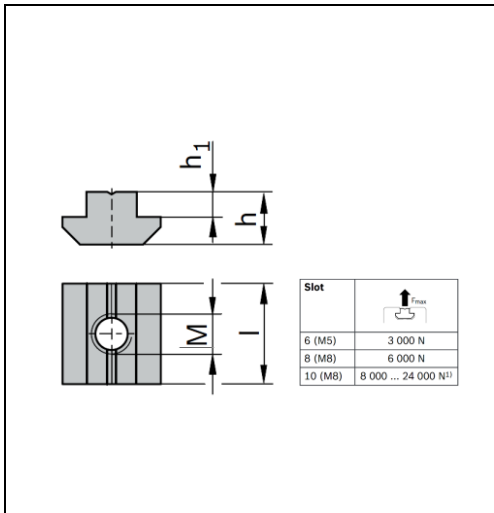
CASTER WHEEL	F (N)	D, mm	h, mm	ESD	Code
D80 F ESD	900	80	108		3842541230



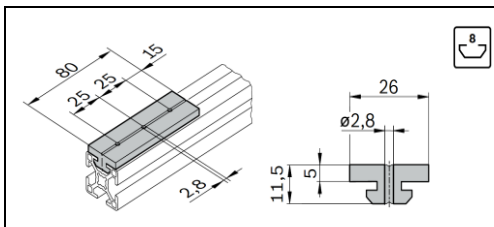
Quick connector, 0°	D, mm	Slot	ES D		Code
Steel; galvanized	17	10/10		10	3842535458



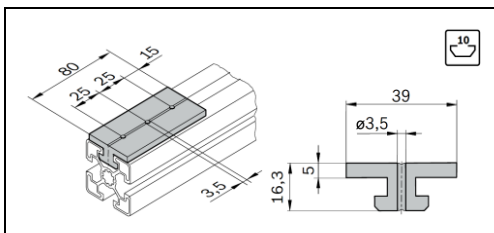
Quick connector, 90°	D, mm	Slot	ES D		Code
Steel; galvanized	17	10/10		10	3842535466



Sliding block	Slot	M	h	h <sub>1</sub>	l	ESD		Code
steel; galvanized	6	M4	4.0	1.0	12		100	3 842 542 692
	6	M5	4.0	1.0	12		100	3 842 542 693
	8	M4	6.0	2.0	16		100	3 842 514 928
	8	M5	6.0	2.0	16		100	3 842 514 929
	8	M6	6.0	2.0	16		100	3 842 514 930
	8	M8	6.0	2.0	16		100	3 842 514 931
	10	M5	10.5	5.0	20		100	3 842 528 741
	10	M6	10.5	5.0	20		100	3 842 528 738
	10	M8	10.5	5.0	20		100	3 842 528 735



Slider for profiles	Material	Slot	ESD		Code
	POM, natural	8		10	3 842 523 212



Slider for profiles	Material	Slot	ESD		Code
	POM, natural	10		10	3 842 530 329

## Technical information

### Metric Tap/Drill.Specifications

Tap	Thread	Drill size
M4	M4 x 0,7	3,3 mm
M5	M5 x 0,8	4,2 mm
M6	M6 x 1	5,0 mm
M8	M8 x 1,25	6,8 mm
M12	M12 x 1,75	10,2 mm
M16	M16 x 2	14,0 mm

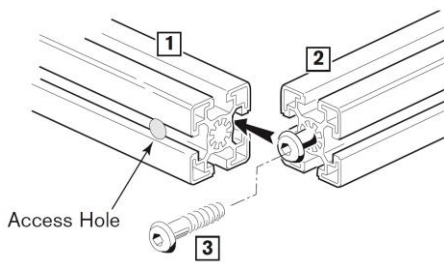
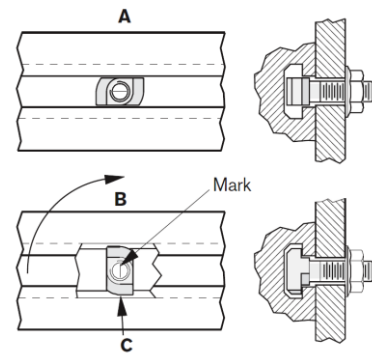
# Making Basic Connections

## Using T-bolts and T-nuts

Bosch Rexroth Aluminum Structural Framing components attach to a profile's T-slot using T-bolts or T-nuts. The drawing to the right illustrates the procedure for using T-bolts and T-nuts. First insert the T-bolt into slot (A), and tighten down the flange nut. As the nut tightens, it will turn the T-bolt 90° in the slot (B), creating a friction lock (C). The same principle applies to T-nuts. Refer to the appropriate catalog page or Section 17 for torque specifications.

### ASSEMBLY HINT:

T-bolts have a mark on the end of the threaded shaft that is in line with the T-bolt head. The T-bolt is correctly positioned when this mark is perpendicular to the T-slot.

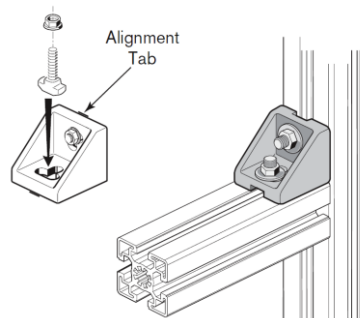


## Using Connection Screws

When using a connection screw to make a 90° connection, an access hole must first be drilled into the end of profile (1) as shown at left. Dimensions vary depending on the profile size and can be found on the appropriate profile page in this catalog. After drilling the access hole in the end of profile (1), thread a connection screw (2) into the end of profile (2). Tighten the screw until the threads are all the way into the profile end, leaving enough of the screw exposed to slide freely along the T-slot. Now slide the profile with connection screw (2) into the T-slot of profile (1), adjacent to the access hole. Tighten the connection screw through the access hole in profile (1) with the appropriate size Allen wrench. Refer to the appropriate catalog page or Section 17 for torque specifications.

## Installing Gussets

Insert T-bolts with flange nuts threaded onto the ends through the gusset mounting holes. Line the gusset up in the profile's T-slot using the alignment tabs on the gusset. Insert the T-bolt into the profile's T-slot, then tighten the flange nut to turn and lock the T-bolt. Refer to the appropriate catalog page or Section 17 for torque specifications.



# Frequency converters EFC5610 assortment





# Frequency converters EFC5610



Bosch Rexroth is one of the most prominent companies in the world that manufactures equipment for the industry. One of the product group branches is frequency converters. We are the only representatives of Bosch Rexroth frequency converters in Lithuania.

Techvitas is representing the Bosch Rexroth company in the field of frequency converters, offers assistance in the selection, installation and maintenance of three-phase frequency inverters.

Converters from 0.4 kW to 90 kW are available in Lithuanian warehouses. Delivery within several working days throughout Lithuania.

EFC5610 is a universal, low-cost frequency converter for reliable speed control and demand-oriented energy supply. V/f control, SVC and FOC control, easy installation and commissioning as well as an increased power range enable a wide range of applications.

- Power range from 0.4 kW to 90 kW;
- Built-in brake chopper (up to 22 kW) and mains filter;
- Control technology: V/f, SVC, FOC;
- STO function (Safe Torque Off);
- Expandability thanks to I/O and fieldbus modules (CANopen, Multi-Ethernet, PROFIBUS);
- Suited and for synchronous motors;
- IP20.



Production lines



Fans



Drilling machines



Processing systems



Water supply systems / pump control

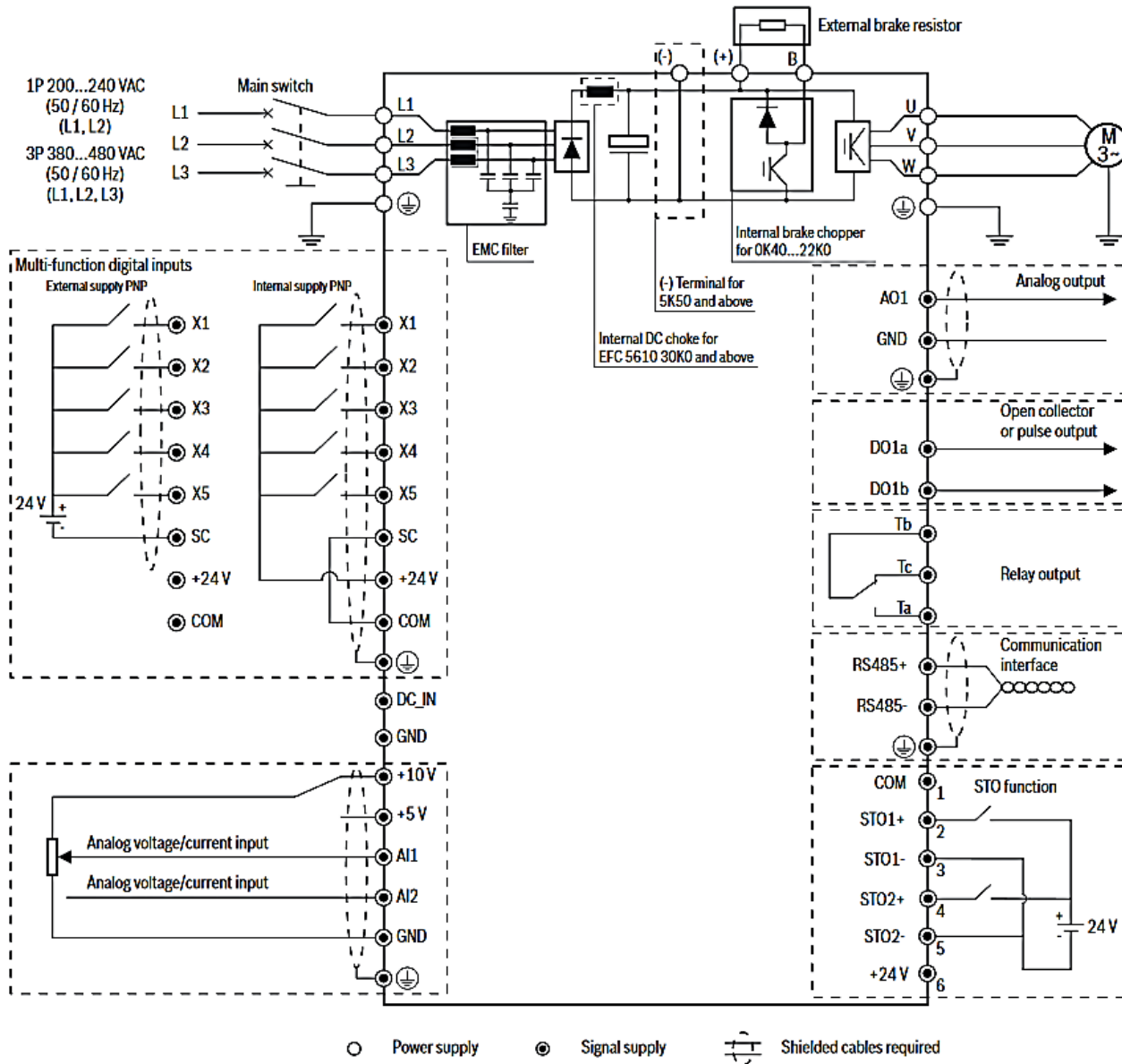
# EFC5610 performance data

Type	EFC 5610	
Mains voltage V	1 AC 200 ... 240 V (-10%/+10%)/3 AC 380 ... 480 (-15%/+10%)	
Mains frequency Hz	50 ... 60 (± 5%)	
Rated motor voltage V	3-phase, 0 ... mains voltage	
Output voltage V	0 ... mains voltage	
Output frequency Hz	0 ... 400	
Overload capacity	HD mode: 150% for 60 sec, 200% for 1 sec; ND mode: 120% for 60 sec	
<b>Functions</b>		
Control technology	V/f, FOC or SVC (sensorless vector control)	
Pulse width modulation (PWM) for converters with 0.4 ... 18.5 kW (0.5 ... 30 hp)	1 ... 15 kHz, adjustable in 1 kHz increments	
Speed control range	1:200	
Start-up torque	V/f	100% at 1.5 Hz; 150% at 3 Hz
	SVC	200% at 0.5 Hz
Frequency resolution	Analog	1/1000 of output frequency
	Digital	0.01 Hz
Frequency setting tolerance	Analog	0.4%
	Digital	0.04%
V/f curve	Linear, quadratic, can be set as desired	
Ramps for acceleration and braking	Linear, S curve	
DC disc brake	Start frequency	0 ... 50 Hz
	Braking time	0 ... 10 sec
Automatic PWM frequency adjustment	Load-dependent PWM frequency adjustment	
Integrated control	Integrated sequential circuit	
Controller	PID	
Bus systems	On-board: Modbus	
	Ext. options: PROFIBUS, CANopen, Multi-Ethernet	
No. 24 V DC digital inputs	5 (one 50 kHz pulse train)	
No. 24 V DC/50 mA digital outputs	1 (32 kHz pulse train)	
No. 230 V AC/30 V DC/3 A relay outputs	1	
No. 0 ... 10 V or 0 ... 20 mA analog inputs	2	
No. 0 ... 10 V or 0 ... 20 mA analog outputs	1	
STO	SIL3 Cat. 4/PL e (0.4 ... 22 kW option)	
Display	Dust cover with 5 diagnostic LEDs; 5-digit LED (optional); LCD (optional)	
Status LED	Rotational direction and operating state	
<b>Brake</b>		
Brake chopper	Internal up to 22 kW (30 hp)	
Brake resistor	External	
<b>Motor cable length</b>		
Internal C3 filter	0.4 ... 4 kW (0.5 ... 5 hp) m	15
	5.5 ... 22 kW (7.5 ... 30 hp) m	30
	30 ... 90 kW (40 ... 125 hp) m	50
External C3 filter	0.4 ... 4 kW (0.5 ... 5 hp) m	30
	5.5 ... 22 kW (7.5 ... 30 hp) m	50
	30 ... 90 kW (40 ... 125 hp) m	100
<b>Ambient conditions</b>		
Ambient temperature (in operation)	-10 °C ... 45 °C (1.5% output power derating per 1° from 45 °C ... 55 °C)	
Max. operating elevation	Derating at 1,000 m or higher (1% of output power per 100 m)	
Relative humidity	< 90% (no condensation)	
IP rating	IP20	
Certifications	CE, UL, cUL, EAC, C-Tick (RCM) , RoHS, TUV (with STO devices)	

# EFC5610 ordering information

Description	Code	Ordering no.
<b>1 phase</b>		
EFC 5610 <b>0.4 kW</b> , 1 AC 200 ... 240 V, 50/60 Hz, 2.4 A, LED display, STO	EFC5610-0K40-1P2-MDA-7P-NNNNN-L1NN	R912007268
EFC 5610 <b>0.75 kW</b> , 1 AC 200 ... 240 V, 50/60 Hz, 4.1 A, LED display, STO	EFC5610-0K75-1P2-MDA-7P-NNNNN-L1NN	R912007269
EFC 5610 <b>1.5 kW</b> , 1 AC 200 ... 240 V, 50/60 Hz, 7.3 A, LED display, STO	EFC5610-1K50-1P2-MDA-7P-NNNNN-L1NN	R912007270
EFC 5610 <b>2.2 kW</b> , 1 AC 200 ... 240 V, 50/60 Hz, 10.1 A, LED display, STO	EFC5610-2K20-1P2-MDA-7P-NNNNN-L1NN	R912007271
<b>3 phase</b>		
EFC 5610 <b>0.4 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 1.3 A, LED display, STO	EFC5610-0K40-3P4-MDA-7P-NNNNN-L1NN	R912007272
EFC 5610 <b>0.75 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 2.3 A, LED display, STO	EFC5610-0K75-3P4-MDA-7P-NNNNN-L1NN	R912007273
EFC 5610 <b>1.5 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 4.0 A, LED display, STO	EFC5610-1K50-3P4-MDA-7P-NNNNN-L1NN	R912007274
EFC 5610 <b>2.2 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 5.6 A, LED display, STO	EFC5610-2K20-3P4-MDA-7P-NNNNN-L1NN	R912007275
EFC 5610 <b>3.0 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 7.4 A, LED display, STO	EFC5610-3K00-3P4-MDA-7P-NNNNN-L1NN	R912007276
EFC 5610 <b>4.0 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 9.7 A, LED display, STO	EFC5610-4K00-3P4-MDA-7P-NNNNN-L1NN	R912007277
EFC 5610 <b>5.5 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 12.7 A, LED display, STO	EFC5610-5K50-3P4-MDA-7P-NNNNN-L1NN	R912007278
EFC 5610 <b>7.5 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 16.8 A, LED display, STO	EFC5610-7K50-3P4-MDA-7P-NNNNN-L1NN	R912007279
EFC 5610 <b>11 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 24.3 A, LED display, STO	EFC5610-11K0-3P4-MDA-7P-NNNNN-L1NN	R912007280
EFC 5610 <b>15 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 32.4 A, LED display, STO	EFC5610-15K0-3P4-MDA-7P-NNNNN-L1NN	R912007281
EFC 5610 <b>18.5 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 39.2 A, LED display, STO	EFC5610-18K5-3P4-MDA-7P-NNNNN-L1NN	R912007282
EFC 5610 <b>22 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 45.2 A, LED display, STO	EFC5610-22K0-3P4-MDA-7P-NNNNN-L1NN	R912007283
EFC 5610 <b>30 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 60.8 A, LED display, STO	EFC5610-30K0-3P4-MDA-7P-NNNNN-L1NN	R912005981
EFC 5610 <b>37 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 73.7 A, LED display, STO	EFC5610-37K0-3P4-MDA-7P-NNNNN-L1NN	R912005982
EFC 5610 <b>45 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 89.0 A, LED display, STO	EFC5610-45K0-3P4-MDA-7P-NNNNN-L1NN	R912005983
EFC 5610 <b>55 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 108 A, LED display, STO	EFC5610-55K0-3P4-MDA-7P-NNNNN-L1NN	R912005984
EFC 5610 <b>75 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 147 A, LED display, STO	EFC5610-75K0-3P4-MDA-7P-NNNNN-L1NN	R912005985
EFC 5610 <b>90 kW</b> , 3 AC 380 ... 480 V, 50/60 Hz, 176 A, LED display, STO	EFC5610-90K0-3P4-MDA-7P-NNNNN-L1NN	R912005986

# Block diagram



# Accessories

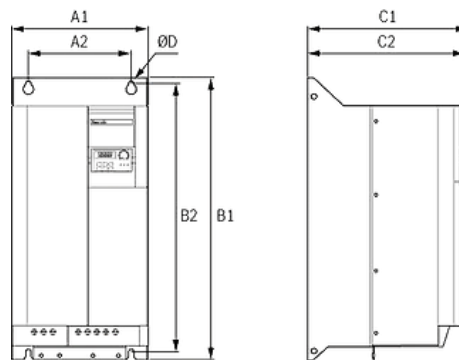
Description	Code	Ordering no.
<b>Brake resistors</b>		
Brake resistor 60W 400Ω   xFC 230V 400W 10%ED	FCAR01.1W0060-N400R0-B-03-NNNN	R911370664
Brake resistor 100W 400Ω   xFC 230V 400W 20%ED	FCAR01.1W0100-N400R0-B-03-NNNN	R911370667
Brake resistor 100W 190Ω   xFC 230V 750W 10%ED	FCAR01.1W0100-N190R0-B-03-NNNN	R911370666
Brake resistor 200W 190Ω   xFC 230V 750W 20%ED	FCAR01.1W0200-N190R0-B-03-NNNN	R911370670
Brake resistor 200W 95Ω   xFC 230V 1,5kW 10%ED	FCAR01.1W0200-N095R0-B-03-NNNN	R911370669
Brake resistor 400W 95Ω   xFC 230V 1,5kW 20%ED	FCAR01.1W0400-N095R0-B-03-NNNN	R911370676
Brake resistor 300W 65Ω   xFC 230V 2,2kW 10%ED	FCAR01.1W0300-N065R0-B-03-NNNN	R911370674
Brake resistor 500W 65Ω   xFC 230V 2,2kW 20%ED	FCAR01.1W0500-N065R0-B-03-NNNN	R911370677
Brake resistor 80W 750Ω   xFC 400V 400W & 750W 10%ED	FCAR01.1W0080-N750R0-B-05-NNNN	R911370665
Brake resistor 150W 750Ω   xFC 400V 400W & 750W 20%ED	FCAR01.1W0150-N750R0-B-05-NNNN	R911370668
Brake resistor 260W 400Ω   xFC 400V 1,5kW 10%ED	FCAR01.1W0260-N400R0-B-05-NNNN	R911370671
Brake resistor 520W 350Ω   xFC 400V 1,5kW 20%ED	FCAR01.1W0520-N350R0-A-05-NNNN	R911370678
Brake resistor 260W 250Ω   xFC 400V 2,2kW 10%ED	FCAR01.1W0260-N250R0-B-05-NNNN	R911370673
Brake resistor 520W 230Ω   xFC 400V 2,2kW 20%ED	FCAR01.1W0520-N230R0-A-05-NNNN	R911370679
Brake resistor 390W 150Ω   xFC 400V 3,0kW & 4,0kW 10%ED	FCAR01.1W0390-N150R0-B-05-NNNN	R911370675
Brake resistor 780W 140Ω   xFC 400V 3,0kW & 4,0kW 20%ED	FCAR01.1W0780-N140R0-A-05-NNNN	R911370681
Brake resistor 780W 75Ω   xFC 400V 5,5kW & 7,5kW 10%ED	FCAR01.1W0780-N075R0-A-05-NNNN	R911370680
Brake resistor 1560W 70Ω   xFC 400V 5,5kW & 7,5kW 20%ED	FCAR01.1W1K56-N070R0-A-05-NNNN	R911370683
Brake resistor 1560W 40Ω   xFC 400V 11kW & 15kW 10%ED	FCAR01.1W1K56-N040R0-A-05-NNNN	R911370682
Brake resistor 2000W 47Ω   xFC 400V 11kW 20%ED	FCAR01.1W02K0-N047R0-A-05-NNNN	R911370684
Brake resistor 3000W 34Ω   xFC 400V 15kW 20%ED	FCAR01.1W03K0-N034R0-A-05-NNNN	R911370685
Brake resistor 4800W 32Ω   xFC 400V 18,5kW 10%ED	FCAR01.1W04K8-N032R0-A-05-NNNN	R911370686
Brake resistor 10000W 28Ω   xFC 400V 18,5kW 20%ED	FCAR01.1W10K0-N028R0-A-05-NNNN	R911370687
Brake resistor 3500W 18,9Ω   xFC 400V 18,5 & 22kW 10%ED	FCAR01.1W3K50-N018R9-A-05-NNNN	R911378270
Brake resistor 4000W 16Ω   xFC 400V 30 & 37kW 10%ED	FCAR01.1W4K00-N016R0-A-05-NNNN	R911378271
Brake resistor 6500W 10Ω   xFC 400V 45 & 55kW 10%ED	FCAR01.1W6K50-N010R0-A-05-NNNN	R911378272
Brake resistor 10000W 6Ω   xFC 400V 75 & 90kW 10%ED	FCAR01.1W10K0-N006R0-A-05-NNNN	R911378273



# Accessories

Description	Code	Ordering no.
<b>Mains filters</b>		
Line filter EFC x610 230V 0.4kW - 0,75kW	FCAF01.1A-A050-E-0010-N-03-NNNN	R911370804
Line filter EFC x610 230V 1.5kW	FCAF01.1A-A050-E-0020-N-03-NNNN	R911370805
Line filter EFC x610 230V 2.2kW	FCAF01.1A-A050-E-0025-N-03-NNNN	R911370806
Line filter EFC x610 400V 0.4kW - 4.0kW	FCAF01.1A-A050-E-0025-A-05-NNNN	R911370807
Line filter EFC x610 400V 5.5kW - 7.5kW	FCAF01.1A-A050-E-0036-A-05-NNNN	R911370811
Line filter EFC x610 400V 11kW - 15kW	FCAF01.1A-A050-E-0050-A-05-NNNN	R911370813
Line filter EFC x610 400V 18.5kW	FCAF01.1A-A050-E-0066-A-05-NNNN	R911371977
Line filter EFC x610 400V 22kW	FCAF01.1A-A050-E-0090-A-05-NNNN	R911370814
Line filter EFC 5610 400V 30kW - 37kW	FCAF01.1A-A100-E-0120-A-05-NNNN	R911370815
Line filter EFC 5610 400V 45kW - 55kW	FCAF01.1A-A100-E-0250-N-05-NNNN	R911370817
Line filter EFC 5610 400V 75kW - 90kW	FCAF01.1A-A100-E-0320-N-05-NNNN	R911370818
Line filter EFC 5610 400V 110kW - 160kW	FCAF01.1A-A100-E-0400-A-05-NNNN	R911384338
<b>Option cards</b>		
Option Card module EFC	FEAE02.1-EA-NNNN	R912006052
IO extension card	FEAE04.1-IO1-NNNN	R912006050
Relay card	FEAE04.1-IO2-NNNN	R912006051
IO Plus extension Card	FEAE04.1-IO3-NNNN	R912007257
Encoder Card: HTL & TTL	FEAE04.1-EN1-NNNN	R912006414
Encoder Card: Resolver	FEAE04.1-EN2-NNNN	R912006415
CANopen card	FEAE03.1-CO-NNNN	R912006133
Profibus card	FEAE03.1-PB-NNNN	R912006132
Multi-Ethernet card	FEAE03.1-ET-NNNN	R912006134
<b>Accessories</b>		
EFC x610 dust cover	FPCC02.1-EANN-NN-NNNN	R912005785
EFC x610 LED Panel	FPCC02.1-EANN-7P-NNNN	R912005783
EFC x610 LCD Panel	FPCC02.1-EANN-LP-NNNN	R912006375
EFC x610 mounting plate	FEAM02.1-EANN-NN-NNNN	R912005787
Panel extension cable 2m	FRKS0006/002,0	R912004657
Panel extension cable 3m	FRKS0004/003,0	R912004410
Panel extension cable 2m with buckle	FRKS0002/002,0	R912007623
Panel extension cable 3m with buckle	FRKS0002/003,0	R912007624
Panel extension cable 5m with buckle	FRKS0002/005,0	R912007625
Shield Connector for B,C,D housing	FEAM03.1-001-NN-NNNN	R912006012
Shield Connector for E,F,G housing	FEAM03.1-002-NN-NNNN	R912006013
Shield Connector for H housing	FEAM03.1-003-NN-NNNN	R912006460
Shield Connector I,J housing	FEAM03.1-004-NN-NNNN	R912006461
Shield Connector for B,C,D housing Version 2	FEAM03.2-001-NN-NNNN	R912007672
Shield Connector for E,F,G housing Version 2	FEAM03.2-002-NN-NNNN	R912007673
Shield Connector for H housing Version 2	FEAM03.2-003-NN-NNNN	R912007674
Shield Connector I,J housing Version 2	FEAM03.2-004-NN-NNNN	R912007675
Shield Connector for K housing Version 2	FEAM03.2-005-NN-NNNN	R912007808
Shield Connector for L housing Version 2	FEAM03.2-006-NN-NNNN	R912007892
Spare Connector Set I/O Terminal xFC x610	FEAE05.1-B2-NNNN	R912006054
Spare Connector STO EFC 5610	FEAE05.1-E3-NNNN	R912007806
Brake Chopper EFC 30...55kW	FEAE07.1-EA1-NNNN	R912007181
Brake Chopper EFC 75 ... 160kW	FEAE07.1-EA2-NNNN	R912007182

## EFC5610 dimensions



Type	A1	A2	B1	B2	C1	C2	ØD	Weight
	mm	mm	mm	mm	mm	mm	mm	kg
EFC5610-0K40-1P2	95	66	166	156	167	159	4.5	1.5
EFC5610-0K75-1P2	95	66	166	156	167	159	4.5	1.5
EFC5610-1K50-1P2	95	66	206	196	170	162	4.5	1.9
EFC5610-2K20-1P2	120	80	231	221	175	167	4.5	2.6
EFC5610-0K40-3P2	95	66	166	156	167	159	4.5	1.5
EFC5610-0K75-3P2	95	66	206	196	170	162	4.5	1.9
EFC5610-1K50-3P2	120	80	231	221	175	167	4.5	2.6
EFC5610-2K20-3P2	120	80	231	221	175	167	4.5	2.6
EFC5610-3K00-3P2	130	106	243	228	233	225	6.5	3.9
EFC5610-4K00-3P2	130	106	243	228	233	225	6.5	4.3
EFC5610-5K50-3P2	150	125	283	265	233	225	6.5	5.7
EFC5610-7K50-3P2	150	125	283	265	233	225	6.5	6.4
EFC5610-11K0-3P2	165	140	315	300	241	233	6.5	8.5
EFC5610-0K40-3P4	95	66	166	156	167	159	4.5	1.5
EFC5610-0K75-3P4	95	66	166	156	167	159	4.5	1.5
EFC5610-1K50-3P4	95	66	206	196	170	162	4.5	1.9
EFC5610-2K20-3P4	95	66	206	196	170	162	4.5	1.9
EFC5610-3K00-3P4	120	80	231	221	175	167	4.5	2.6
EFC5610-4K00-3P4	120	80	231	221	175	167	4.5	2.6
EFC5610-5K50-3P4	130	106	243	228	233	225	6.5	3.9
EFC5610-7K50-3P4	130	106	243	228	233	225	6.5	4.3
EFC5610-11K0-3P4	150	125	283	265	233	225	6.5	5.7
EFC5610-15K0-3P4	150	125	283	265	233	225	6.5	6.4
EFC5610-18K5-3P4	165	140	315	300	241	233	6.5	8
EFC5610-22K0-3P4	165	140	315	300	241	233	6.5	8.5
EFC5610-30K0-3P4	250	200	510	492	272	264	7	27.5
EFC5610-37K0-3P4	250	200	510	492	272	264	7	29.5
EFC5610-45K0-3P4	265	200	585	555	325	317	11	39
EFC5610-55K0-3P4	265	200	585	555	325	317	11	42
EFC5610-75K0-3P4	325	200	760	727	342	334	11	54
EFC5610-90K0-3P4	325	200	760	727	342	334	11	61
EFC5610-110K-3P4	385	250	923	893	350	342	11	71.7
EFC5610-132K-3P4	385	250	923	893	350	342	11	76.6
EFC5610-160K-3P4	480	400	1030	995	360	352	13	108

# Software

Using the freely available ConverterWorks PC software, Rexroth frequency converters EFC 3610 and EFC 5610 can be commissioned and remotely controlled. The connection with the PC is established via a standard USB interface.

The software is available in the download section of the online catalog:

[www.boschrexroth.com/EFCx610](http://www.boschrexroth.com/EFCx610)





# Sensors assortment



**SICK**  
Sensor Intelligence.

# SICK sensors

SICK has a wide range of photoelectric, electromagnetic and ultrasonic sensors available to solve demanding industrial applications. SICK also offers a complete line of rotary and linear encoders.

Key sensing technologies from SICK:

## Photoelectric

- Standard photoelectric sensors are ideal for applications such as counting, ensuring parts presence, sorting, automatic routing and positioning.
- High-performance sensors measure from up to 1.1 km distance micron level thickness and identify registration marks without needing to use different contrast sensors for registration mark color changes. Moreover, SICK offers application-specific sensors such as vision, measuring light grids, luminescence and color sensors.

## Electromagnetic

- Inductive sensors detect metals, enabling die protection on presses, counting, and positioning of a robot arm.
- Capacitive sensors detect non-metal objects. Applications include controlling the level of granules or verifying product reserve.
- Magnetic sensors detect magnetic objects. Eg: object detection through non-ferrous material such as plastic containers/pipes.
- Magnetic cylinder sensors detect piston position in pneumatic cylinders.

## Ultrasonic






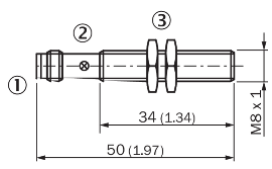
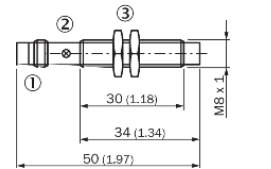
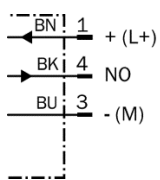
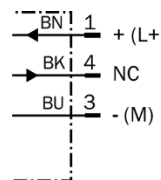
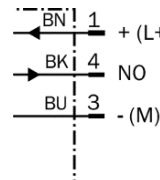
- Ultrasonic sensors can be used in applications such as fill level detection of silos/tanks, sag control and counting.

## Angular, Positional, and Length Measurement






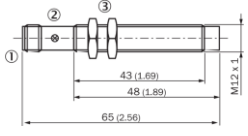
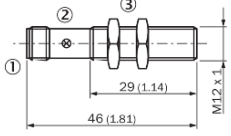
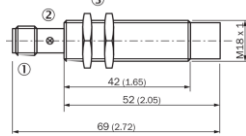
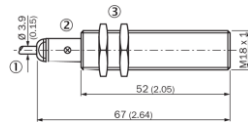
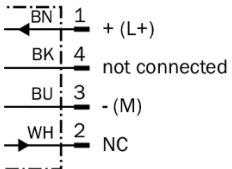
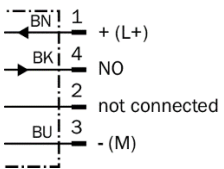
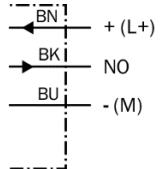
- Encoders provide angular, position and length feedback for servo drives and controls such as material handling (conveying and warehousing technology, stage construction, navigation), and in manufacturing (packaging machinery, machine tools, robots).







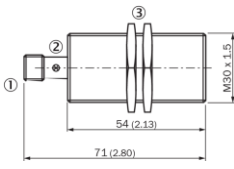
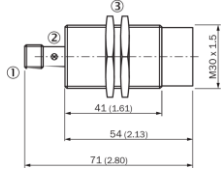
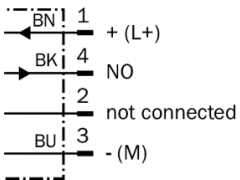
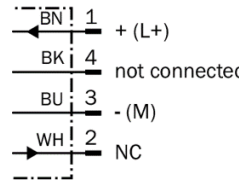
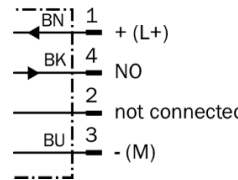
# Inductive proximity sensors (M8)

	 <p>IME08-02BPSZT0S</p>	 <p>IME08-02BPOZT0S</p>	 <p>IME08-04NPOZT0S</p>	 <p>IME08-04NPSZT0S</p>
	Part number:	<b>1040870</b>	<b>1040874</b>	<b>1040890</b>
Dimensional drawing				
Housing	Cylindrical thread design			
Housing	Standard			
Thread size	M8 1			
Diameter	Ø 8 mm			
Sensing range $S_n$	2 mm		4 mm	
Safe sensing range $S_a$	1.62 mm		3.24 mm	
Installation type	Flush		Non-flush	
Switching frequency	4,000 Hz			
Connection type	Connector M8, 3-pin			
Switching output	PNP			
Output function	NO	NC		NO
Electrical wiring	DC 3-wire			
Enclosure rating	IP67			
Supply voltage	10 V DC ... 30 V DC			
Current consumption	10 mA			
Continuous current $I_a$	≤ 200 mA			
Ambient operating temperature	-25 °C ... +75 °C			
Housing material	Metal, Nickel-plated brass			
Sensing face material	Plastic, Plastic			
Connection diagram				






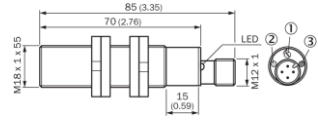
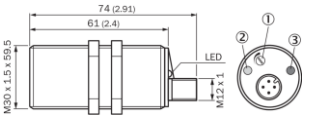
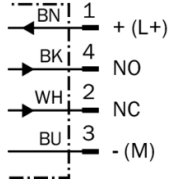
# Inductive proximity sensors (M12, M18)

	 <p>IME12-08NPOZC0S</p>	 <p>IME12-04BPSZC0K</p>	 <p>IME18-08NPSZC0S</p>	 <p>IME18-08BPSZW5S</p>
	Part number:	<b>1040784</b>	<b>1040763</b>	<b>1040950</b>
Dimensional drawing				
Housing	Cylindrical thread design			
Housing	Standard	Short-body	Standard	
Thread size	M12 1		M18 1	
Diameter	Ø 12 mm		Ø 18 mm	
Sensing range $S_n$	8 mm	4 mm	8 mm	
Safe sensing range $S_a$	6.48 mm	3.24 mm	6.48 mm	
Installation type	Non-flush	Flush	Non-flush	Flush
Switching frequency	2,000 Hz		1,000 Hz	
Connection type	Male connector M12, 4-pin			Cable, 5-wire, 5 m
Switching output	PNP			
Output function	NC	NO		
Electrical wiring	DC 3-wire			
Enclosure rating	IP67			
Supply voltage	10 V DC ... 30 V DC			
Current consumption	10 mA			
Continuous current $I_a$	≤ 200 mA			
Ambient operating temperature	-25 °C ... +75 °C			
Housing material	Metal, Nickel-plated brass			
Sensing face material	Plastic, Plastic			
Connection diagram				





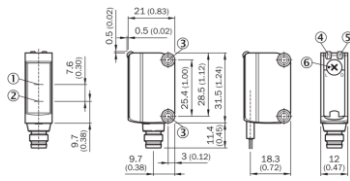
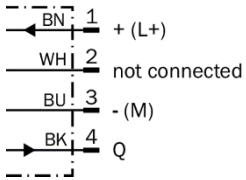
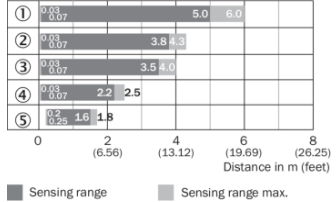

# Inductive proximity sensors (M30)

 <b>SICK</b> Sensor Intelligence.			
	IME30-15BPSZC0S	IME30-15BPOZC0S	IME30-20NPSZC0S
Part number:	<b>1041030</b>	<b>1041034</b>	<b>1041046</b>
Dimensional drawing			
Housing	Cylindrical thread design		
Housing	Standard		
Thread size	M30 1,5		
Diameter	Ø 30 mm		
Sensing range $S_n$	15 mm		20 mm
Safe sensing range $S_a$	12,15 mm		16.2 mm
Installation type	Flush		Non-flush
Switching frequency	500 Hz		
Connection type	Male connector M12, 4-pin		
Switching output	PNP		
Output function	NO	NC	NO
Electrical wiring	DC 3-wire		
Enclosure rating	IP67		
Supply voltage	10 V DC ... 30 V DC		
Current consumption	10 mA		
Continuous current $I_a$	≤ 200 mA		
Ambient operating temperature	-25 °C ... +75 °C		
Housing material	Metal, Nickel-plated brass		
Sensing face material	Plastic, Plastic		
Connection diagram			

# Capacitive proximity sensors (M18, M30)





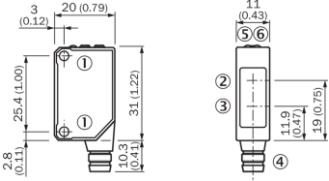
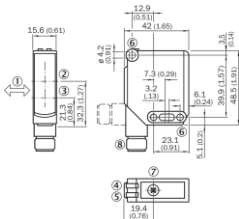
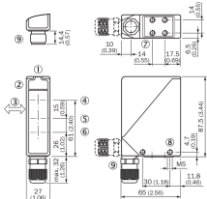
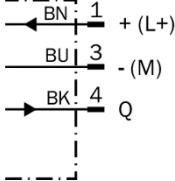
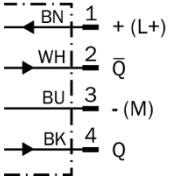
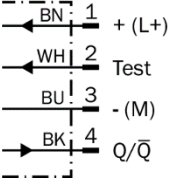
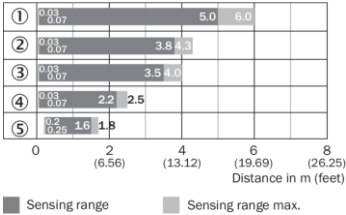
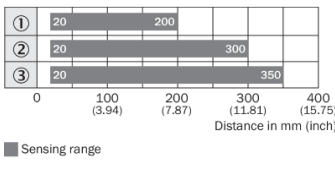
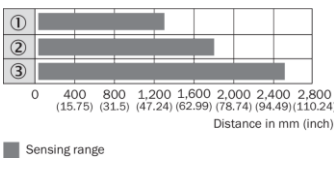
	 <b>CM18-08BPP-EC1</b>	 <b>CM18-12NPP-EC1</b>	 <b>CM30-16BPP-EC1</b>	 <b>CM30-25NPP-EC1</b>
	Part number:	<b>6058145</b>	<b>6058149</b>	<b>6058153</b>
Dimensional drawing				
Housing	Cylindrical thread design			
Thread size	M18 x 1		M30 x 1,5	
Diameter	Ø 18 mm		Ø 30 mm	
Sensing range $S_n$	3 mm ... 8 mm	3 mm ... 12 mm	3 mm ... 16 mm	4 mm ... 25 mm
Safe sensing range $S_a$	6,12 mm	9,18 mm	12,24 mm	19,13 mm
Installation type	Flush	Non-flush	Flush	Non-flush
Switching frequency	50 Hz			
Connection type	Male connector M12, 4-pin			
Switching output	PNP			
Output function	Complementary			
Electrical wiring	DC 4-wire			
Enclosure rating	IP68, IP69K			
Supply voltage	10 V DC ... 36 V DC			
Current consumption	12 mA			
Continuous current $I_a$	≤ 200 mA			
Ambient operating temperature	-30 °C ... +85 °C			
Housing material	Plastic, PBT			
Adjustment	Potentiometer (Sensitivity)			
Connection diagram				
Reduction factors	Metal 1 Water 1 PVC Approx. 0.4 Oil Approx. 0.25 Glass 0.6 Ceramics 0.5 Alcohol 0.7 Wood 0.2 ... 0.7			

# Photoelectric sensors






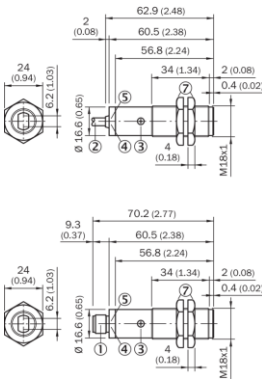
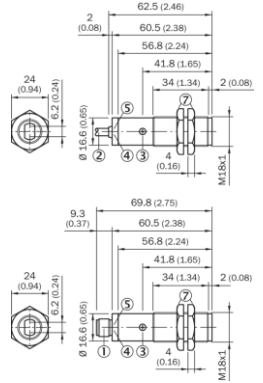
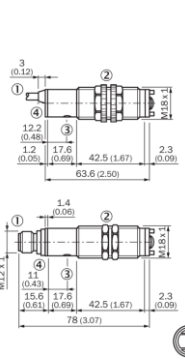
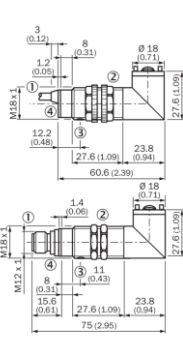
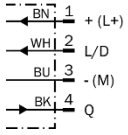
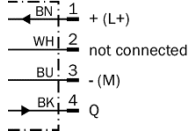
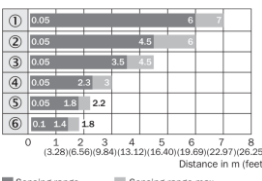
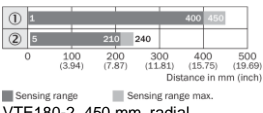
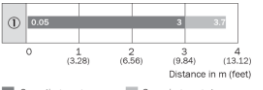
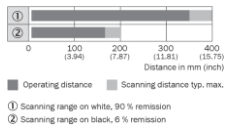
	 <p>GL6-P4212</p>	 <p>GL6-P4112</p>	 <p>GTE6-P4231</p>
	Part number:	<b>1062110</b>	<b>1051777</b>
Dimensional drawing			
Sensor/ detection principle	Photoelectric retro-reflective sensor, Dual lens		Photoelectric proximity sensor, energetic
Sensing range max. (Sn)	≤ 6 m (PL80A)		≤ 900 mm
Type of light	Visible red light		
Light source	PinPoint LED		
Supply voltage	10 V DC ... 30 V DC		
Power consumption	30 mA		
Switching frequency	1,000 Hz	500 Hz	
Switching output	PNP		
Switching mode	Light/dark switching		
Housing material	Plastic, ABS/PC		
Optics material	Plastic, PMMA		
Enclosure rating	IP67		
Connection type	Male connector M8, 4-pin		
Adjustment	Potentiometer, 270°	–	Mechanical spindle, 5 turns
Ambient operating temperature	–25 °C ... +55 °C		
Connection diagram			
Items included	BEF-W100-A (1), P250 (1)	P250 (1)	–
Sensing range diagram	 <p>① Reflector PL80A ② Reflector PL40A ③ Reflector P250 ④ Reflector PL20A ⑤ Reflective tape REF-IRF-56</p>		 <p>① Sensing range    ② Sensing range, typ. max. ① sensing range on white, 90% remission ② Sensing range on black, 6.25 % remission</p>


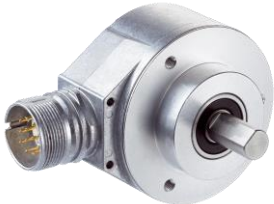

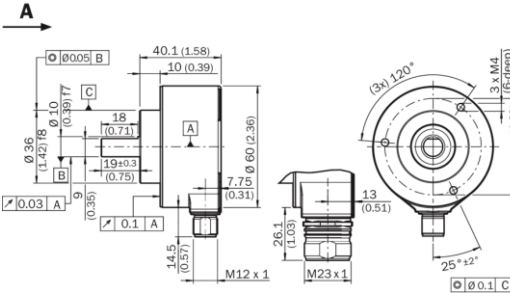
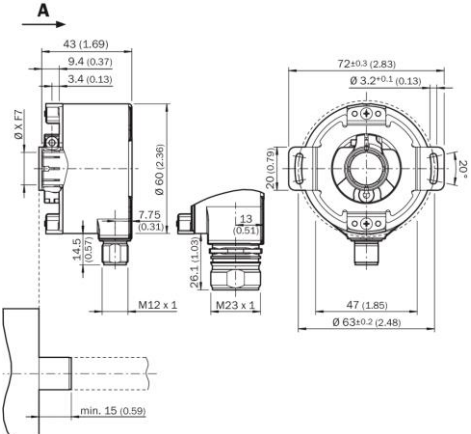


# Photoelectric sensors




	 <b>WL100-2P3439</b>	 <b>WTB11-2P2431</b>	 <b>WT24-2B410</b>
<b>Part number:</b>	<b>1062110</b>	<b>1041376</b>	<b>1016933</b>
<b>Dimensional drawing</b>			
<b>Sensor/ detection principle</b>	Photoelectric retro-reflective sensor, Dual lens		Photoelectric proximity sensor, Background suppression
<b>Sensing range max. (Sn)</b>	0.01 m ... 7.2 m (PL80A)	20 mm ... 350 mm	100 mm ... 2,500 mm
<b>Type of light</b>	Visible red light		Infrared light
<b>Light source</b>	LED		
<b>Supply voltage</b>	10 V DC ... 30 V DC		
<b>Power consumption</b>	30 mA		50 mA
<b>Switching frequency</b>	1,000 Hz	200 Hz	1,000 Hz
<b>Switching output</b>	PNP		
<b>Switching mode</b>	Light/dark switching	Complementary	Light/dark switching
<b>Housing material</b>	Plastic, ABS/PC/POM	Plastic, ABS	Metal, Zinc diecast
<b>Optics material</b>	Plastic, PMMA		
<b>Enclosure rating</b>	IP67	IP66, IP67, IP69K	IP69K
<b>Connection type</b>	Connector M8, 3-pin		Male connector M12, 4-pin
<b>Adjustment</b>	Potentiometer		
<b>Ambient operating temperature</b>	-25 °C ... +55 °C	-30 °C ... +60 °C	-40 °C ... +60
<b>Connection diagram</b>			
<b>Items included</b>	BEF-W100-A (1), P250 (1)	-	-
<b>Sensing range diagram</b>	 <ul style="list-style-type: none"> <li>① Reflector PL80A</li> <li>② Reflector P250</li> <li>③ Reflector PL50A, PL40A</li> <li>④ Reflector PL30A, PL31A</li> <li>⑤ Reflector PL20A</li> <li>⑥ Reflective tape Diamond Grade</li> <li>⑦ P45</li> </ul>	 <ul style="list-style-type: none"> <li>① sensing range on black, 6% remission</li> <li>② Sensing range on gray, 18% remission</li> <li>③ sensing range on white, 90% remission</li> </ul>	 <ul style="list-style-type: none"> <li>① sensing range on black, 6% remission</li> <li>② Sensing range on gray, 18% remission</li> <li>③ sensing range on white, 90% remission</li> </ul>

# Photoelectric sensors


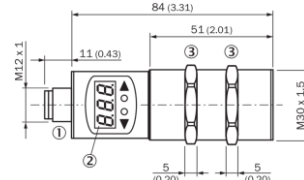
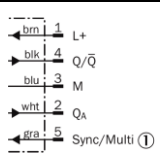
	 <p>VL180-2P42431</p>	 <p>VTE180-2P42442</p>	 <p>VL18-3F3140</p>	 <p>VTE18-3F4240</p>
	Part number:	<b>6041819</b>	<b>6041807</b>	<b>6013530</b>
Dimensional drawing				
Sensor/ detection principle	Photoelectric retro-reflective sensor, Dual lens	Photoelectric proximity sensor, energetic	Photoelectric retro-reflective sensor	Photoelectric proximity sensor, energetic
Sensing range max. (Sn)	0.05 m ... 7 m (PL80A)	1 mm ... 500 mmv	0.05 m ... 3.7 m (C110A)	5 mm ... 400 mm
Thread diameter	M18 x 1			
Type of light	Visible red light			Infrared light
Light source	LED			
Supply voltage	10 V DC ... 30 V DC			
Power consumption	30 mA			
Switching frequency	1000 Hz		250 Hz	
Switching output	PNP			
Switching mode	Light/dark switching		Light switching (NO)	
Housing material	Metal, Nickel-plated brass and PC		Metal, Nickel-plated brass	
Optics material	Plastic, PMMA			
Enclosure rating	IP67			
Connection type	Male connector M12, 4-pin			
Adjustment	Potentiometer, 270°		–	Potentiometer, 270°
Ambient operating temperature	–25 °C ... +55 °C		–25 °C ... +70 °C	
Connection diagram				
Items included	P250 (1)			
Sensing range diagram	 <p>           ① Reflector PL80A            ② Reflector P250, PL40A, PL50A, C110A            ③ Reflector PL30A, PL31A            ④ Reflector PL20A            ⑤ P45            ⑥ Reflective tape Diamond Grade         </p>	 <p>           VTE180-2, 450 mm, radial            ① sensing range on white, 90% remission            ② Sensing range on gray, 18% remission         </p>	 <p>           ① Reflector type C110         </p>	 <p>           ① Scanning range on white, 90% remission            ② Scanning range on black, 6% remission         </p>


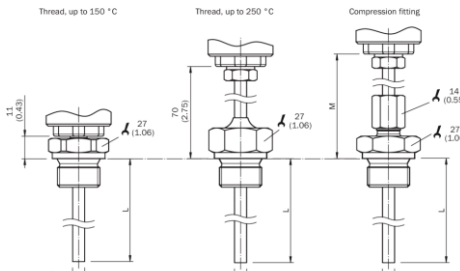
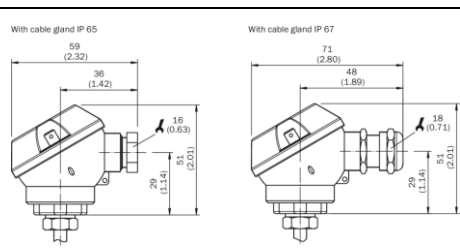
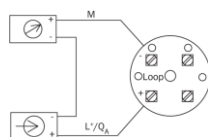
	 <p style="text-align: center;">DFS60B-S4PA10000</p>	 <p style="text-align: center;">DFS60B-TDPA10000</p>
<p>Part number:</p>	<p><b>1036720</b></p>	<p><b>1036907</b></p>
<p>Dimensional drawing</p>		
<p>Pulses per revolution</p>	<p>10,000 (programmable)</p>	
<p>Measuring step deviation at non binary number of lines</p>	<p><math>\pm 0.01^\circ</math></p>	
<p>Electrical interface</p>	<p>4.5 V ... 32 V, TTL/HTL programmable, Factory setting: output level TTL</p>	
<p>Connection type</p>	<p>Male connector, M23, 12-pin, radial</p>	
<p>Operating current</p>	<p>40 mA</p>	
<p>Output frequency</p>	<p><math>\leq 600</math> kHz</p>	
<p>Reference signal, position</p>	<p><math>90^\circ</math>, electric, logically gated with A and B</p>	
<p>Mechanical design</p>	<p>Solid shaft, face mount flange</p>	<p>Through hollow shaft</p>
<p>Shaft diameter</p>	<p><math>\varnothing 10</math> mm x 19 mm</p>	<p><math>\varnothing 10</math> mm</p>
<p>Operating speed</p>	<p><math>\leq 9,000</math> min<sup>-1</sup></p>	
<p>Operating temperature range</p>	<p><math>-30^\circ\text{C} \dots +100^\circ\text{C}</math></p>	

Accessories:






























	 <p style="text-align: center;">DOL-2312-G02MLA3</p>	 <p style="text-align: center;">DOS-2312-G</p>
<p>Part number:</p>	<p><b>2030682</b></p>	<p><b>6027538</b></p>
<p>Connection type head A</p>	<p>Female connector, M23, 12-pin, straight</p>	<p>Female connector, M23, 12-pin, straight</p>
<p>Cable</p>	<p>2 m, 11-wire, PUR</p>	<p>Quick screw connection</p>

# Ultrasonic and temperature sensors





<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Ultrasonic sensors</p>  <p>UM30-213118</p>	<p>Operating range, limiting range</p> <p>200 mm ... 1,300 mm, 2,000 mm</p>	<p>6036923</p>
	<p>Switching frequency</p> <p>8 Hz</p>	
	<p>Ultrasonic frequency (typical)</p> <p>200 kHz</p>	
	<p>Analog output</p> <p>1 x 0 V ... 10 V (<math>\geq 100 \text{ k}\Omega</math>) 1 x 4 mA ... 20 mA (<math>\leq 500 \Omega</math>)</p> <p>1) Automatic selection of analog current or voltage output dependent on load. 2) For 4 mA ... 20 mA and <math>V_s \leq 20 \text{ V}</math> max. load <math>\leq 100 \Omega</math>. 3) Subsequent smoothing of the analog output, depending on the application, may increase the response time by up to 200 %</p>	
	<p>Resolution analog output</p> <p>12 bit</p>	
	<p>Switching output</p> <p>1 x PNP (200 mA)</p>	
	<p>Supply voltage <math>V_s</math></p> <p>DC 9 V ... 30 V</p>	
	<p>Connection type</p> <p>Male connector, M12, 5-pin</p>	
	<p>Enclosure rating</p> <p>IP67</p>	
	<p>Ambient temperature operation</p> <p>-25 °C ... +70 °C</p>	
<p>Dimensional drawing Dimensions in mm (inch)</p> <p>① Connection ② Display ③ Mounting nuts, SW 36 mm</p>		
<p>Connection diagram</p>		


<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Temperature sensors</p>  <p>TBT-1AAG10253GZ</p>	<p>Measuring range</p> <p>-50 °C +150 °C</p>	<p>6043044</p>	
	<p>Analog signal output and ohmic load RA</p> <p>4 mA ... 20 mA, 2-wire (<math>RA \leq (L + 10 \text{ V}) / 0.028 \text{ A}</math> [Ohm])</p>		
	<p>Pressure resistance</p> <p>Max. 120 bar</p>		
	<p>Electrical connection</p> <p>Cable gland M16 x 1.5, IP65</p>		
	<p>Insertion length/diameter of probe</p> <p>25 mm / 3 mm</p>		
	<p>Process connection</p> <p>Thread G 1/4 B</p>		
	<p>Dimensional drawing: cylindrical threads</p>		
	<p>Dimensional drawing</p>		
	<p>Connection type Cable entry M16 x 1.5, cable cross-section up to 0.75 mm<sup>2</sup>, output signal 4 mA ... 20 mA</p>		

# Cables and plug connectors

Cables		Female connector, M8, 3-pin, straight, 2m	2095860
		Female connector, M8, 3-pin, straight, 5m	2095884
		Female connector, M8, 3-pin, straight, 10m	2095885
		Female connector, M8, 3-pin, angled, 2m	2096165
		Female connector, M8, 3-pin, angled, 5m	2096166
		Female connector, M8, 3-pin, angled, 10m	2096209
		Female connector, M8, 4-pin, straight, 2m	2095888
		Female connector, M8, 4-pin, angled, 2m	2095962
		Female connector, M8, 4-pin, straight, 5m	2095889
		Female connector, M8, 4-pin, angled, 5m	2095963
		Female connector, M8, 4-pin, straight, 10m	2095890
		Female connector, M8, 4-pin, angled, 10m	2095964
		Female connector, M12, 4-pin, straight, 2m	2095607
		Female connector, M12, 4-pin, angled, 2m	2095766
		Female connector, M12, 4-pin, straight, 5m	2096235
		Female connector, M12, 4-pin, angled, 5m	2095897
		Female connector, M12, 4-pin, straight, 10m	2096236
		Female connector, M12, 4-pin, angled, 10m	2095898
		Female connector, M12, 5-pin, straight, 2m	2096239
		Female connector, M12, 5-pin, straight, 5m	2096240
	Female connector, M12, 5-pin, straight, 10m	2096241	
	Female connector, M12, 5-pin, angled, 2m	2096215	
	Female connector, M12, 5-pin, angled, 5m	2096216	
	Female connector, M12, 5-pin, angled, 10m	2096217	
Plug connectors		Female connector, M8, 3-pin, straight	7902077
		Female connector, M8, 4-pin, straight	6009974
		Female connector, M12, 4-pin, angled	6007303
		Female connector, M12, 4-pin, straight	6007302
		Female connector, M12, 5-pin, angled	6009720

# Accessories

Reflectors		PL80A reflector, 80 mm x 80 mm, Screw-on, 2 hole mounting	<b>1003865</b>
		P250 reflector, 47 mm x 47 mm, Screw-on, 2 hole mounting	<b>5304812</b>
		PL30A reflector, 56 mm x 28 mm, Screw-on, 2 hole mounting	<b>1002314</b>
		C110A reflector, Ø 80 mm, Center hole mounting, screw-on	<b>5304549</b>

Couplings		KUP-0606-S, 6 mm / 6 mm	<b>2056406</b>
		KUP-0608-S, 6 mm / 8 mm	<b>5314179</b>
		KUP-0610-S, 6 mm / 10 mm	<b>2056407</b>
		KUP-0808-S, 8 mm / 8 mm	<b>5314177</b>
		KUP-0810-S, 8 mm / 10 mm	<b>5314178</b>
		KUP-1010-S, 10 mm / 10 mm	<b>2056408</b>

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