# **FLAT SWIVEL UNITS SERIES SF-C**

### PRODUCT ADVANTAGES



### "The superior"

### ▶ Up to 100% more performance than the benchmark

Superior end position damping lets you swivel more mass in the shortest amount of time, increasing your machine's component output

### Large centre bore

Reduce the interference contours in your application by placing your power supply line directly through the middle of the rotary flange

### More than 100% higher radial bearing load than the benchmark

The generously scaled bearings stand for robustness and long service life and provide the highest process reliability for your application

### BENEFITS IN DETAIL



### 1 Two way ball bearing hollow shaft

- for feedthrough cables and hoses
- high forces and moments capacity

### 2 Up to 8 way integrated air feed-through

- for hoseless air transfer
- hose package does not have to be pivoted

### 3 Adjustable end position

- +/- 3° adjustable end position

### 4 Large, precise locating flange

- simple tool connection

### 5 Integrated shock absorbers with spiral groove technology

- adjustable end position damping
- heating is prevented through installation in pneumatic pressure chamber

### 6 Air flow control valve

- for speed regulation (included in the delivery)

### 7 Force transfer

- rack and pinion

### 8 Drive

- two double-acting pneumatic cylinders
- high torque rating



### **SERIES CHARACTERISTICS**

	Installation size					Vers	sion				
	SFXXX	-90N	-180N	N	-90DX	-180DX	DX	ML	MLDX	M	MDX
10 MIo	10 million maintenance-free cycles (max.)	•	•	•	•	•	•	•	•	•	•
IP 64	IP64	•	•	•	•	•	•	•	•	•	•
+ 😥	Inductive sensor	•	•	•	•	•	•	•	•	•	•
+ 🕏	Magnetic field sensor	•	•	•	•	•	•	•	•	•	•
	Flange	•	•	•	•	•	•	•	•	•	•
	Powerstop end position damping	•	•	•	•	•	•	•	•	•	•
+/- 3°	End positions adjustable +/- 3	•	•	•	•	•	•	•	•	•	•
	Positionability - 2 positions	•	•	•	•	•	•				
	Positionability - 3 positions							•	•		
	Positionability - 3 positions locked									•	•
90°	Rotation angle 90°	•			•			•	•	•	•
180°	Rotation angle 180°		•			•		•	•	•	•
180°	Swivel angle 180° freely adjustable			•			•				
<b>b</b>	Fluid feed-through				•	•	•		•		•

### ► TECHNICAL DATA

Swivel angle		Torque	Weight	IP class	
Installation size	[°]	[Nm]	[kg]		
SF50	0 - 180	1,5 - 2,4	0,6 - 1,14	IP64	
SF74	0 - 180	4,5 - 7,3	1,6 - 2,6	IP64	
SF100	0 - 180	13 - 20	3,7 - 5,8	IP64	
SF125	0 - 180	32 - 38	8,8 - 12,9	IP64	
SF155	0 - 180	54 - 62	15 - 21,8	IP64	
SF195	0 - 180	120 - 130	27,5 - 41,1	IP64	

### ► FURTHER INFORMATION IS AVAILABLE ONLINE



All information just a click away at: www.zimmer-group.com. Find data, illustrations, 3D models and operating instructions for your installation size using the order number for your desired product. Quick, clear and always up-to-date.

# **FLAT SWIVEL UNITS SERIES SF-C**

### ► HOW TO ORDER CORRECTLY

Order no.				
Flat swivel units				
Installation size	 50			
Installation size	74			
Installation size	100			
Installation size	125			
Installation size	155			
Installation size	195			
Swivel angle 0° - 180°, infinitely variable		N		
Integrated hoseless pneumatic feed-through, 4-way		D4		
Integrated hoseless pneumatic feed-through, 6-way		D6		
Integrated hoseless pneumatic feed-through, 8-way		D8		
Rotation angle 90°		-90N		
Integrated hoseless pneumatic feed-through, 4-way		-90D4		
Integrated hoseless pneumatic feed-through, 6-way		-90D6		
Integrated hoseless pneumatic feed-through, 8-way		-90D8		
Rotation angle 180°		-180N		
Integrated hoseless pneumatic feed-through, 4-way		-180D4		
Integrated hoseless pneumatic feed-through, 6-way		-180D6		
Integrated hoseless pneumatic feed-through, 8-way		-180 <b>D</b> 8		
Version: ML (Size SF50 / SF74 / SF100)				
► At -90° and +90° position, mechanical and shock-absorbed fixed stop				
<ul> <li>0° position is not locked, as opposed to the M version</li> </ul>				
► For these units, the driven pistons move against dominant limit stop pistons and, like for the locked center position, undergo shock absorption while moving into end position	i			
Simplified activation for horizontal rotary movements				
Swivel angle -90° - 0° - +90°		ML		
Integrated hoseless pneumatic feed-through, 4-way		MLD4		
Integrated hoseless pneumatic feed-through, 6-way		MLD6		
Integrated hoseless pneumatic feed-through, 8-way		MLD8		
Version: M (Size SF125 / SF155 / SF195)				
All three positions for mechanical and shock-mounted fixed stop				
<ul> <li>0° center position using two stopper pistons with integrated shock absorbers</li> </ul>				
➤ A mechanical fixed stop is generated using ratchet bolts that are pushed through arrester pistons into the ring groove of the stopper piston				
Swivel angle -90° - 0° - +90°				
Integrated hoseless pneumatic feed-through, 4-way				
Integrated hoseless pneumatic feed-through, 6-way				
Integrated hoseless pneumatic feed-through, 8-way				

### ► VERSION: ML (SIZE SF50 / SF74 / SF100)



### ► VERSION: M (SIZE SF125 / SF155 / SF195)



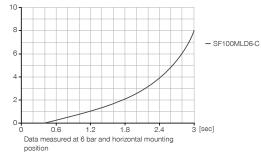
# **FLAT SWIVEL UNITS INSTALLATION SIZE SF100MLD6-C**

### **▶ PRODUCT SPECIFICATIONS**



### Moment of inertia

[kg m²] Shows the expected swivel time vs the calculated moment of inertia



### ► INCLUDED IN DELIVERY



2 [piece] Flow Control Valves - with Swivel joint DRV1-8X6



1 [piece] Attachment Kit ANS0073



6 [piece] COR0030100



1 [piece] Commissioning USB 052650

### RECOMMENDED ACCESSORIES



### **ENERGY SUPPLY**



**DSV1-8** Pressure safety valve



## **SENSORS**



Magnetic field sensor straight, cable 0.3 m - M8 connector



DSV1-8E

Pressure safety valve with quick exhaust



### **CONNECTIONS / OTHER**

MFS02-S-KHC-P1-PNP



### **SENSORS**



MFS02-K-KHC-P1-PNP

Magnetic field sensor straight, cable 5 m



#### **KAG500**

Plug-in connector Straight Cable 5m - Socket M8 (female)



#### S8-G-3

Plug-in connector customizable Straight - Connector M8

### RECOMMENDED ACCESSORY ATTACHMENT KIT



Inductive proximity switch - Cable 5 m



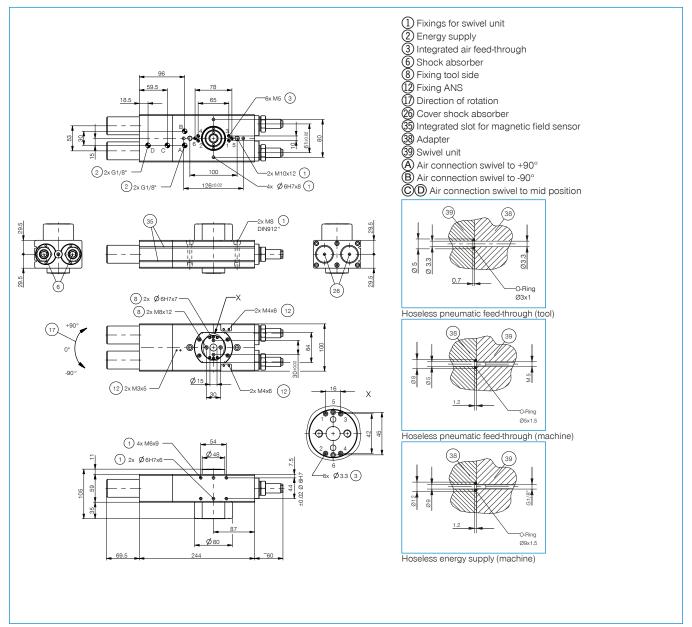
Plug-in connector Angled Cable 5m - Socket M8 (female)



NJ8-E2S

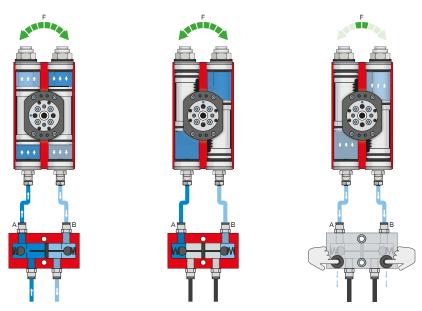
Inductive proximity switch, M8

	► Technical data
Order no.	SF100MLD6-C
Swivel angle [°]	-90 / 0 / +90
Torque [Nm]	13
Swivel angle regulable +/- [°]	3
Passage bore Ø [mm]	15
Axial bearing load [N]	2500
Radial bearing load [Nm]	155
Repetition accuracy +/- [°]	0.01
Operating pressure min. [bar]	3
Operating pressure max. [bar]	8
Nominal operating pressure [bar]	6
Operating temperature min. [°C]	5
Operating temperature max. [°C]	+80
Air volume per cycle [cm³]	304
Protection to IEC 60529	IP64
Weight [kg]	7.1



# **FLAT SWIVEL UNITS** SERIES SF-C FUNCTIONAL DESCRIPTION





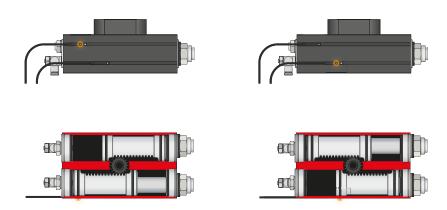
### Pressure safety valve - DSV

Ensures safe retention of force and position if the system pressure drops

The integrated double check valve, which can be unlocked, retains the system pressure of the swivel unit in case of EMERGENCY STOP. To ensure the function, the valve must be installed as close to the swivel unit's air connection as possible. In variant E, two pushbuttons are installed that allow for controlled bleeding of the swivel unit.



MFS02



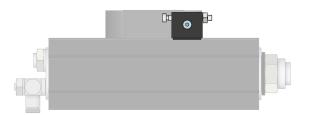
### 1-point magnetic field sensors - MFS

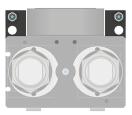
For non-contact sensing of the piston position

These sensors are clamped in the C-groove of the swivel unit and detect the magnet attached to the piston of the swivel unit. To ensure use in a wide variety of space conditions, the sensors are available in two versions. While the horizontal MFS02, with straight cable outlet, disappears into the C-groove of the swivel unit almost completely, the vertical MFS01 is taller, but has a cable outlet that is offset at an angle of 90°. The variants are available in versions with 5 m cables with exposed leads and 0,3 m cable with connector.



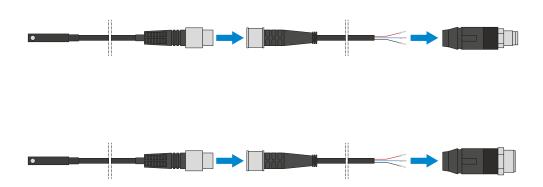
### **CONNECTIONS / OTHER**





### Attachment kit

The attachment kit is mounted on the pivot unit by the mounting hardware included in the scope of delivery and serves as an external stop. Thanks to the external stop, the force is dispersed through the housing and prevents the rack and pinion from being overloaded. The attachment kit also makes it possible to sense the end positions via inductive proximity switches.



### **Plug-in connectors**

For extending and fabricating the connection lines for the sensors

Cables with a length of 5 m with exposed leads are available. Depending on the specific needs, the cables can be shortened or fabricated with connectors in sizes M8 and M12.