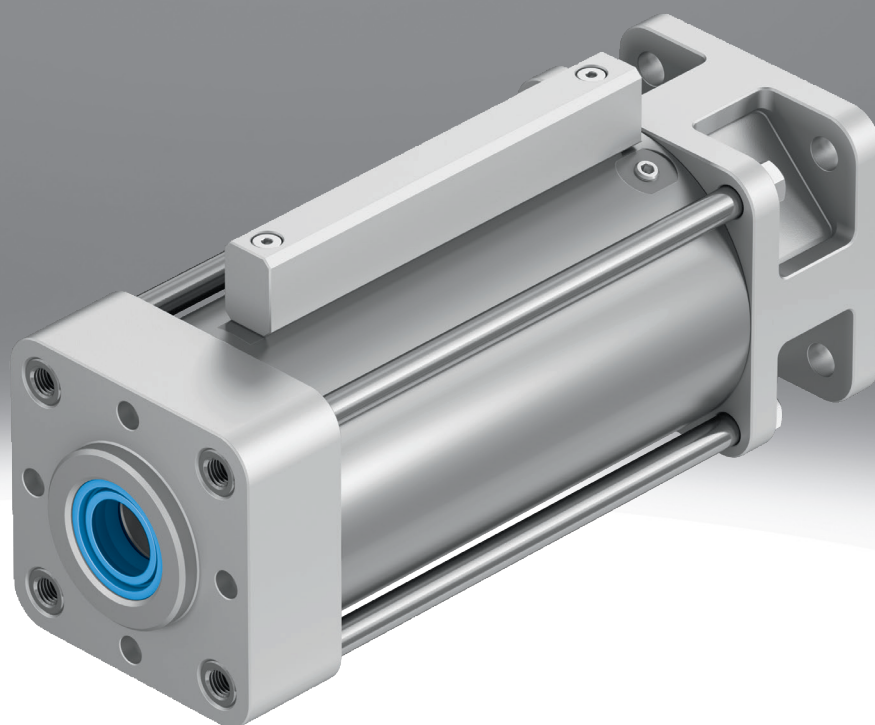


Holding brake DACS

FESTO



Characteristics

At a glance

- Holding brakes are generally used to dynamically brake a movement or to prevent round rods which can be adjusted longitudinally from starting up at any position.
- The piston rod can be braked or clamped by attaching a holding brake to a pneumatic cylinder. The round rod or piston rod is securely fixed in place during clamping so that the application of external force does not produce any relative motion. A rod can be secured at any position along the stroke, whether in the end positions or the intermediate positions.
- This provides protection in the event of a pressure failure and secures the round rod or piston rod during intermediate stops for process operations.

Diagrams

[Link](#) [dacs](#)



The diagrams shown in this document are also available online. These can be used to display precise values.

Position sensing

For monitoring the switching status

Corrosion protection

[R3] High corrosion protection

Protects the holding brake against corrosion

Certification

[Link](#) [dacs](#)

[S] Safety device to Machinery Directive 2006/42/EC

The holding brakes DACS-...-S are a safety device as defined in the Machinery Directive 2006/42/EC and have been tested and certified to relevant standards.

The holding brakes DACS-...-S are suitable for use in EX zones in “static holding” mode.

Possible safety functions:

- Holding function: Holding a piston rod by clamping with frictional locking
- Emergency braking function: Stopping the movement of a piston rod by clamping with frictional locking

The safety functions are triggered by switching off the compressed air supply or by the failure of the compressed air supply.

Type code

001	Series	
DACS	Holding brake	

002	Piston rod diameter [mm]	
16	16	
20	20	
25	25	
40	40	

003	Position sensing	
A	For proximity sensor	

004	Corrosion protection	
	Standard	
R3	High corrosion protection	

005	Certification	
S	Safety device to Machinery Directive 2006/42/EC	

Datasheet

General technical data

General technical data				
Piston rod diameter [mm]	16	20	25	40
Round material to be clamped	16 mm	20 mm	25 mm	40 mm
Release connection, clamping unit	G1/8		G3/8	
Type of mounting	Via female thread With accessories			
Type of clamping with direction of action	on both sides Clamping via spring force, released via compressed air			
Position detection	Via proximity switch			
Mounting position	optional			

Operating and environmental conditions

Operating and environmental conditions								
Piston rod diameter [mm]	16		20		25		40	
Corrosion protection	Standard []	High corrosion protection [R3]	Standard []	High corrosion protection [R3]	Standard []	High corrosion protection [R3]	Standard []	High corrosion protection [R3]
Operating pressure	0.38 ... 0.8 MPa							
Operating pressure	3.8 ... 8 bar							
Operating pressure	55.1 ... 116 psi							
Operating medium	Compressed air to ISO 8573-1:2010 [7:4:4]							
Ambient temperature	-20 ... 80°C				-10 ... 80°C		-20 ... 80°C	
Corrosion resistance class CRC ¹⁾	1 - Low corrosion stress	3 - high corrosion stress	1 - Low corrosion stress	3 - high corrosion stress	1 - Low corrosion stress	3 - high corrosion stress	1 - Low corrosion stress	3 - high corrosion stress

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

Safety characteristics

Piston rod diameter [mm]	16	20	25	40
Safety function	Holding and stopping a movement			
Performance Level (PL)	Stopping, holding, blocking a movement/category 1, Performance Level c			
Approval	German Technical Control Board (TÜV)			
Certificate issuing authority	German Technical Control Board (TÜV) CA 697			
CE mark (see declaration of conformity) ¹⁾	To EC Machinery Directive			
UKCA marking (see declaration of conformity)	To UK regulations for machines			

1) www.festo.com/certificates/dacs

Forces

Piston rod diameter [mm]	16	20	25	40
Static holding force	1,350 N	3,300 N	8,200 N	17,000 N

Note on holding forces

- The specified holding force refers to a static load. If this value is exceeded, slippage may occur. Dynamic forces occurring during operation must not exceed the static holding force if slippage is to be prevented. The holding brake is backlash-free in the clamped condition when varying loads are applied to the round rod.
- Lateral loads and bending moments on the round rod can impair the function. (Make sure that the load on the round rod is only in the direction of movement.)

Control:

- The holding brake may only be released when the forces on the round rod are in equilibrium. Otherwise, there is a risk of accidents due to the sudden movement of the round rod. Blocking off the compressed air supply at both ends (e.g. with a 5/3-way valve) does not provide any safety.

Weight

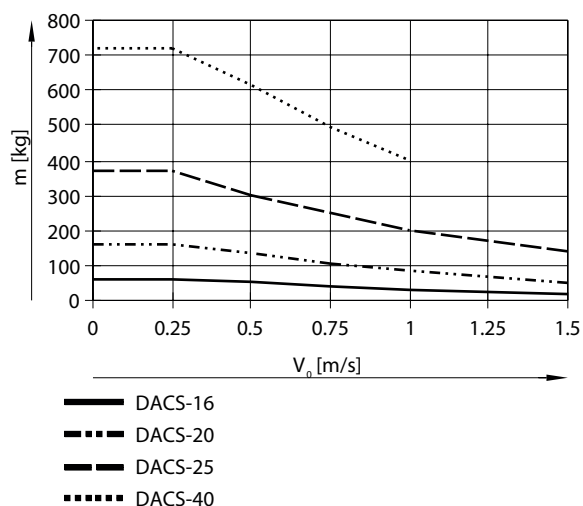
Piston rod diameter [mm]	16	20	25	40
Product weight	1,483	3,143	12,832	34,500

Datasheet

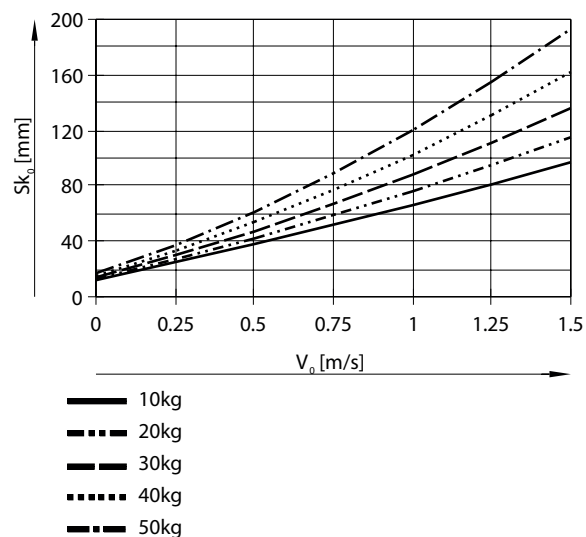
Materials

Material housing	Steel
Material spring	High-alloy steel
Material piston	Steel
Material clamp jaws	Tool steel
Material seals	NBR, TPE-U(PU)
LABS (PWIS) conformity	VDMA24364 zone III
Note on materials	RoHS-compliant

Load mass m as a function of drive speed v



Stopping distance as a function of drive speed v – DACS-16

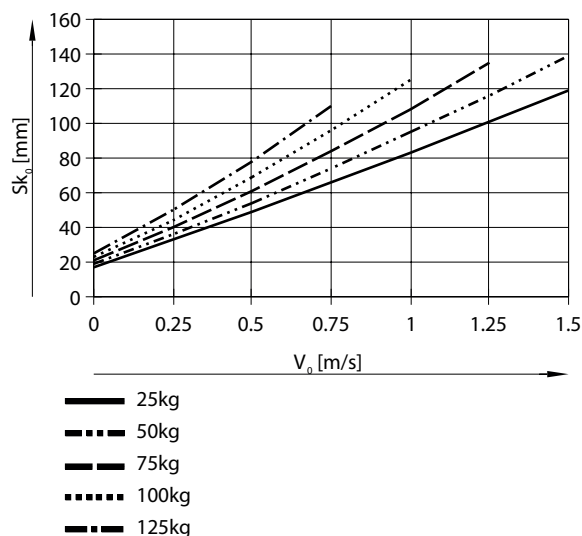


All data in the graphs is intended exclusively for the purpose of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning.

More information: www.festo.com/userdocu/dacs

Datasheet

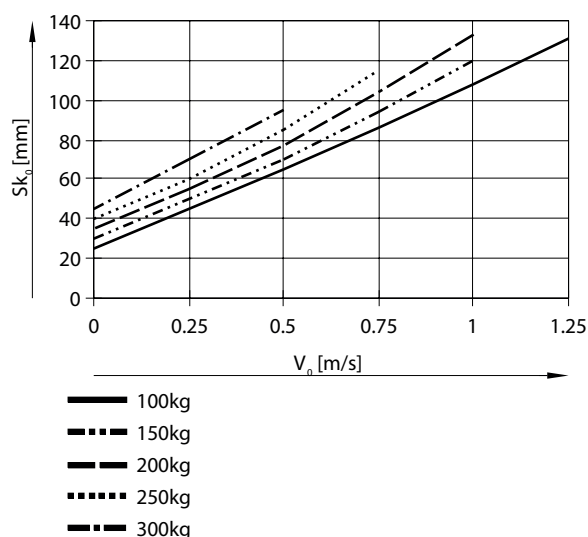
Stopping distance as a function of drive speed v – DACS-20



All data in the graphs is intended exclusively for the purpose of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning.

More information: www.festo.com/userdocu/dacs

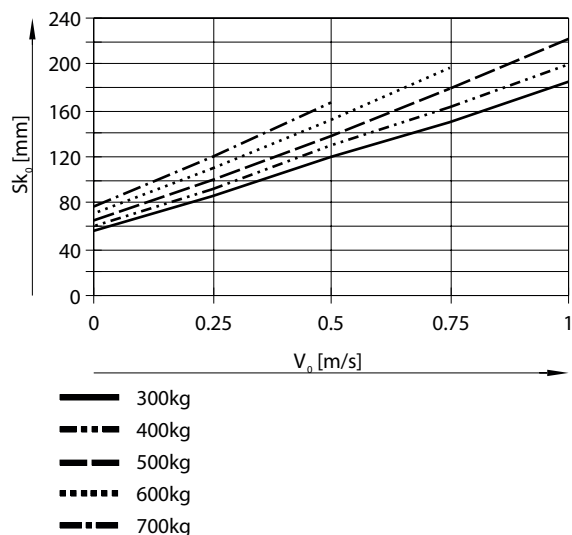
Stopping distance as a function of drive speed v – DACS-25



All data in the graphs is intended exclusively for the purpose of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning.

More information: www.festo.com/userdocu/dacs

Stopping distance as a function of drive speed v – DACS-40



All data in the graphs is intended exclusively for the purpose of preselection when configuring the emergency braking function and must be checked mathematically and in practice prior to commissioning.

More information: www.festo.com/userdocu/dacs

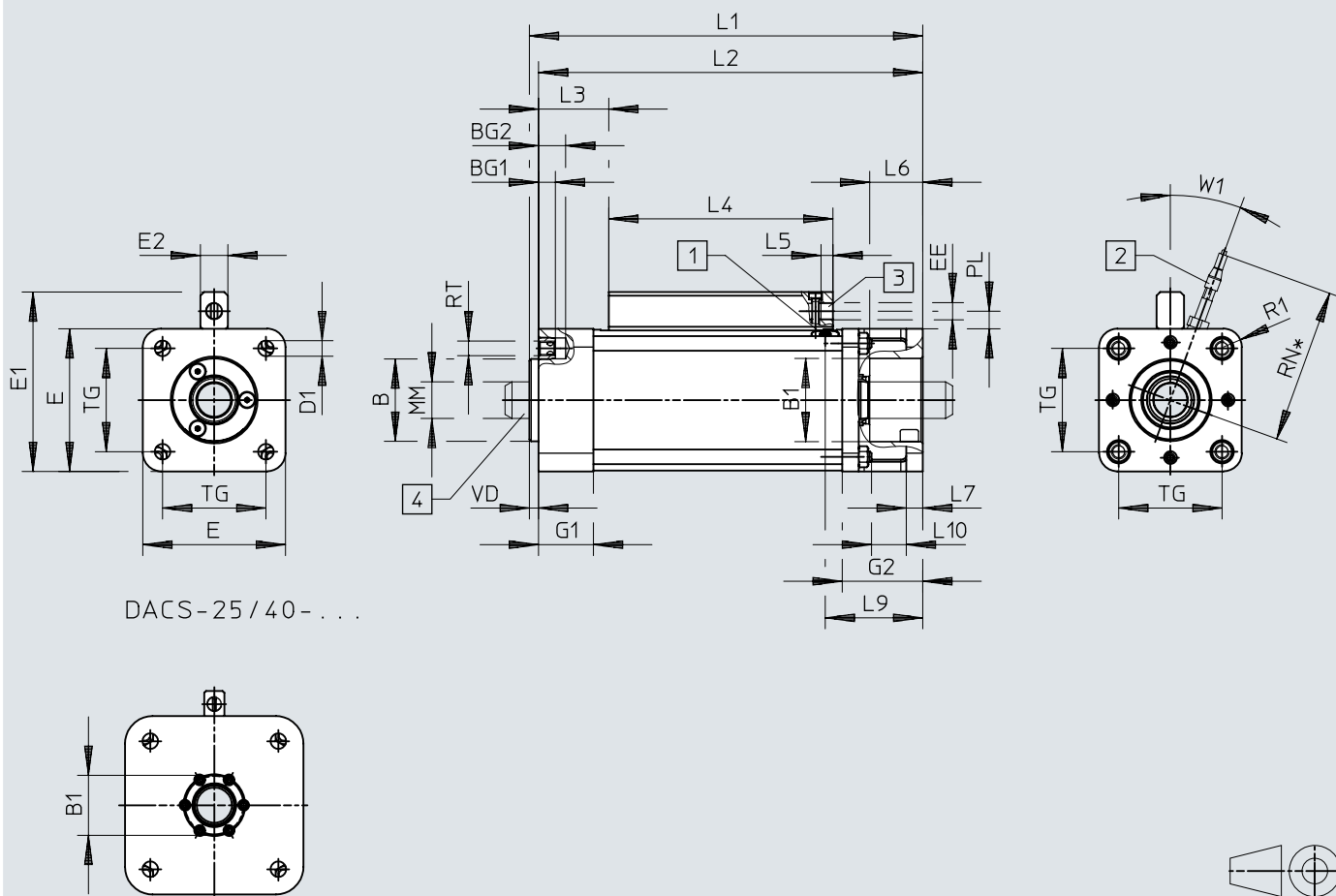
Datasheet

Technical data for proximity switch DADG

Size	M4
Operational voltage range DC	10 ... 30 V
Residual ripple	10%
Max. output current	100 mA
Max. switching frequency	5,000 Hz
Rated operating distance	0.6 mm
Assured operating distance	0.64 mm
Repetition accuracy	0.01 mm
Reverse polarity protection	For all electrical connections
Electrical connection 1, function	Switching output
Electrical connection 1, connection type	Cable
Electrical connection 1, connector system	Open end
Switching output	PNP
Switching element function	N/O contact
Degree of protection	IP67
CE mark (see declaration of conformity)	To EU EMC Directive
UKCA marking (see declaration of conformity)	To UK instructions for EMC
Ambient temperature	-25 ... 70°C
LABS (PWIS) conformity	VDMA24364 zone III
Material housing	Steel

Dimensions

Dimensions – Holding brakes DACS

Download CAD data www.festo.com

- [1] Position for proximity switch (thread M6x0.75)
 [2] Sensor kit DADG-D-F8
 [3] Connection to release clamping function
 [4] Round rod to be clamped (not included in the scope of delivery)

	B ø d11	B1 ¹⁾ ø ±0,1	BG1	BG2	D1 ø	E ±0,8	E1 ±1	E2	EE	G1	G2	L1 ±1,2	L2 ±1	L3	L4	L5
DACS-16	35	35,5	8	13,2	6,5	54	74,1	15	G1/8	27	40	191	186	29	116	6,5
DACS-20	45	45,5	9	14,8	8,5	78	98,1	15	G1/8	30	44	215	210	38,4	122,5	6,5
DACS-25	55	55,5	10	14,8	10,5	124	152,1	22	G3/8	35	54	260	255	47,1	148,5	8
DACS-40	65	65,5	14	21	17	195	222,6	22	G3/8	48	80	305	298	67,2	143,5	8

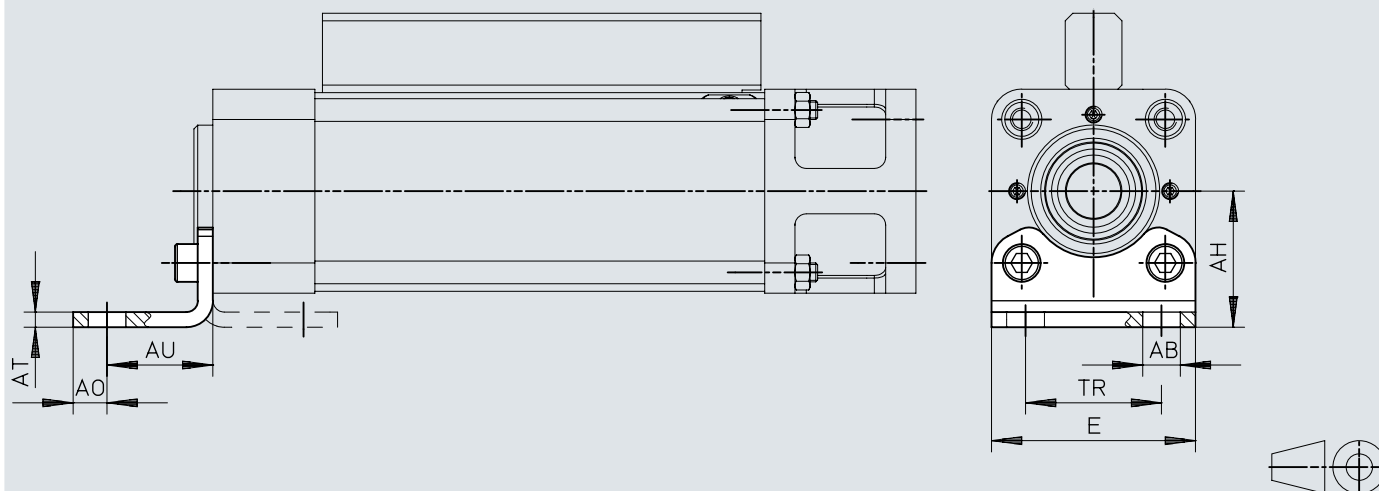
	L6 +0,3	L7	L9	L10	MM ²⁾ ø	PL	R1	RN	RT	TG ±0,2	VD ±0,2	W1
DACS-16	22	8	49,4	17 ₊₁	16	9,6	R8	98	M6	38	5	27°
DACS-20	29	9	53,6	18 ₊₁	20	9,6	R10	100	M8	56,5	5	20°
DACS-25	38,5	12	65,3	20 _{+1,5}	25	13,6	R15	120	M10	89	5	20°
DACS-40	61,5	16	95,5	34 _{+1,5}	40	13,6	R30	155	M16	140	7	20°

- 1) Not suitable as centring diameter
 2) Round rod to be clamped: observe specifications (e.g. diameters, tolerances...) in the datasheet

Dimensions

Dimensions – Foot mounting HNG/HNC/CRHNC

Download CAD data www.festo.com

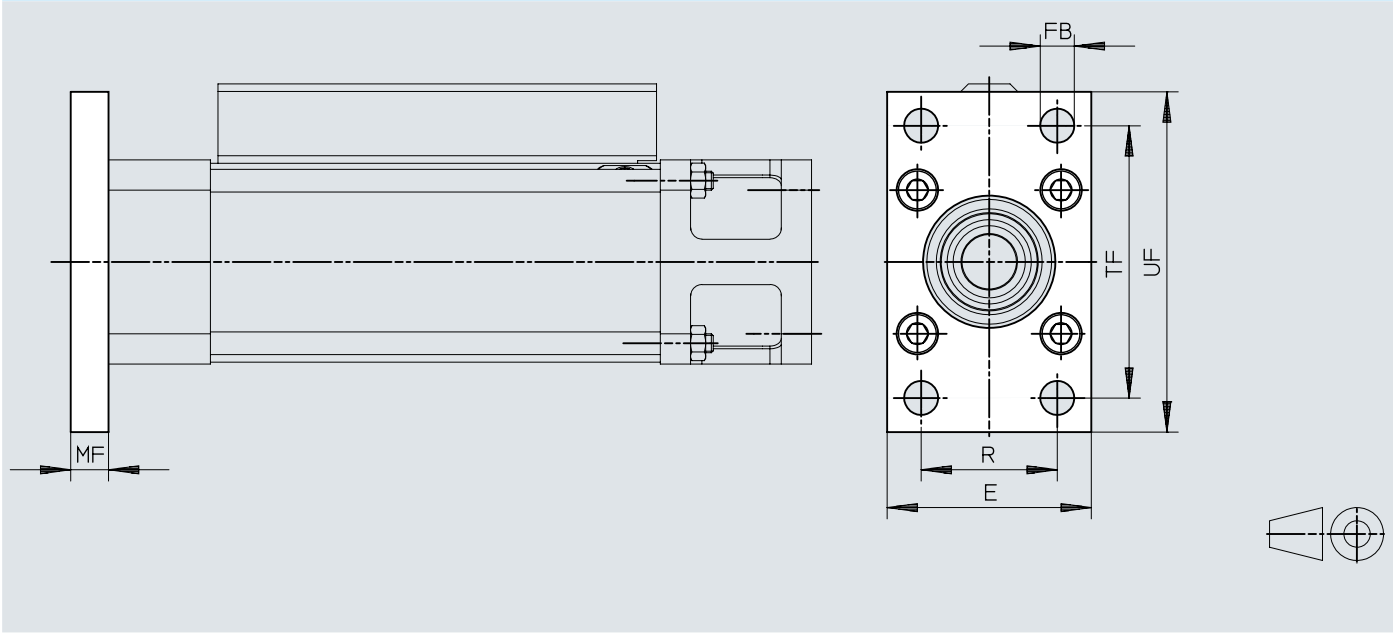


[1] Note: The foot mounting can also be fitted on the side of the end cap. Separate screws are required for this.

		AB Ø	AH	AO	AT	AU	E	TR
HNC/CRHNC-40	DACS-16	10	36	9	4	28	54	36
HNC/CRHNC-63	DACS-20	10	50	12,5	5	32	75	50
HNC/CRHNC-100	DACS-25	14,5	71	17,5	6	41	110	75
HNG-160	DACS-40	18,5	115	20	10	60	169	115

Dimensions

Dimensions – Flange mounting FNC/CRFNG Download CAD data www.festo.com

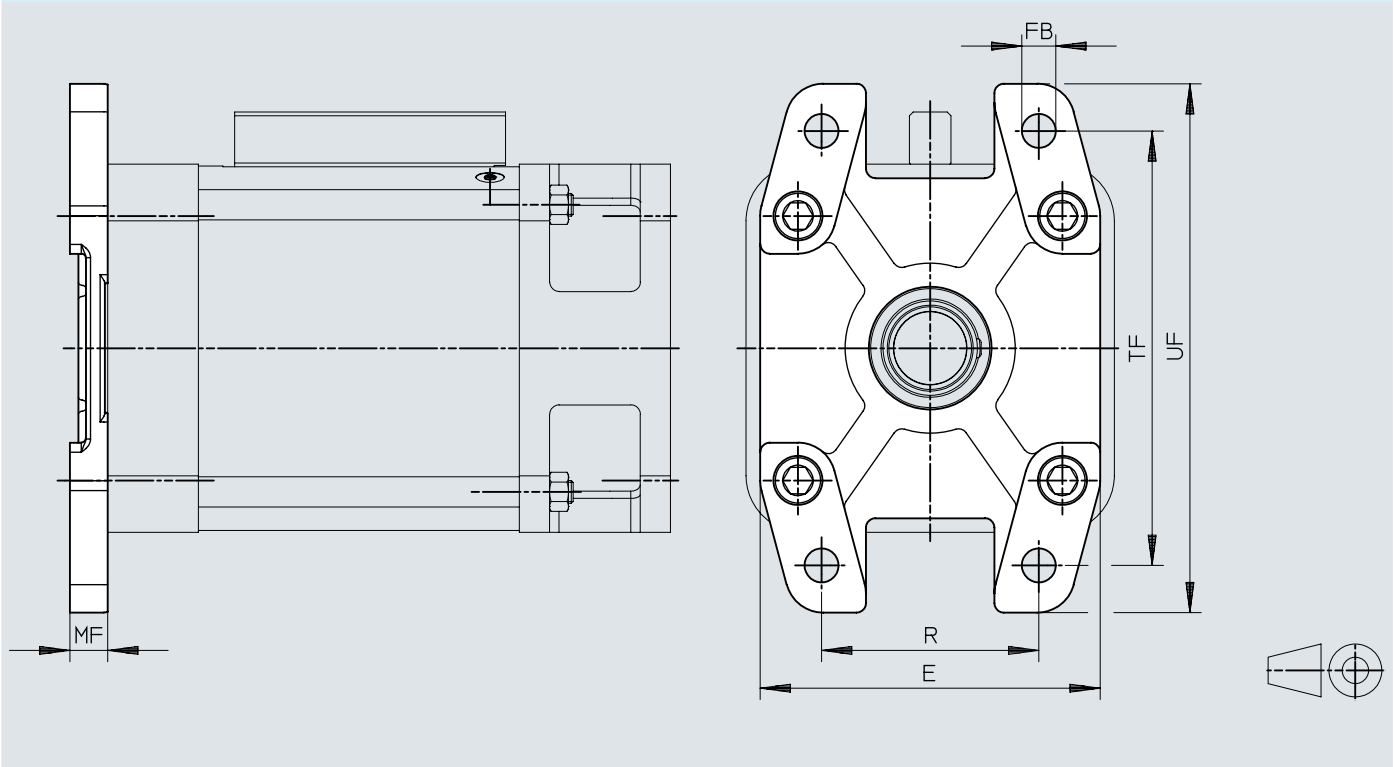


		E	FB Ø	MF	R	TF	UF
FNC/CRFNG-40	DACS-16	54	9	10	36	72	90
FNC/CRFNG-63	DACS-20	75	9	12	50	100	120
FNC/CRFNG-100	DACS-25	110	14	16	75	150	175

Dimensions

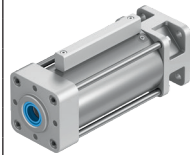
Dimensions – Flange mounting FNG

Download CAD data www.festo.com



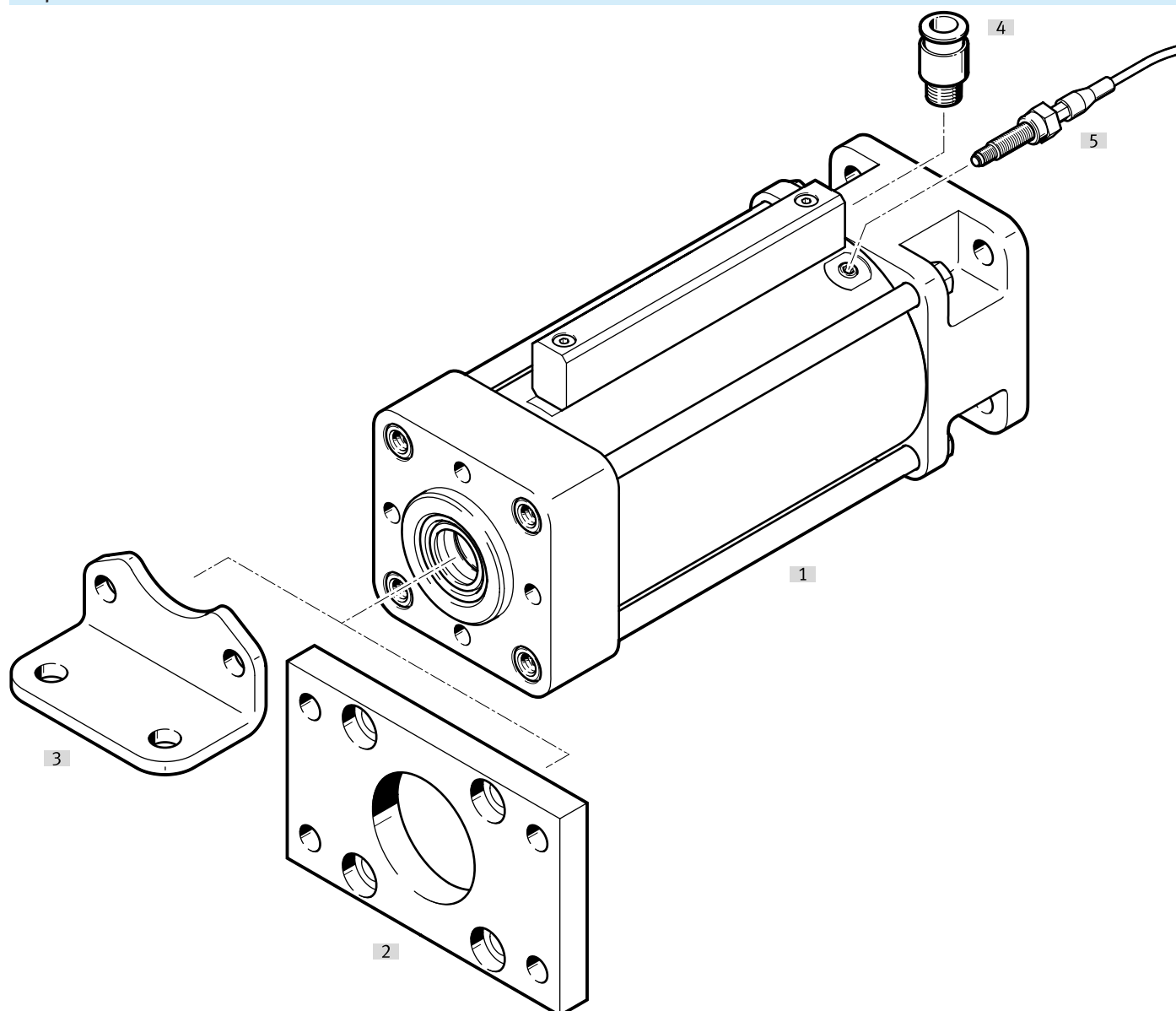
		E	FB Ø	MF	R	TF	UF
FNG-160	DACS-40	180	18	20	115	230	280

Ordering data

Holding brake DACS				
	Piston rod diameter [mm]	Corrosion protection	Part no.	Type
	16 mm	Standard	8072770	DACS-16-A-S
		High corrosion protection	8072774	DACS-16-A-R3-S
	20 mm	Standard	8072771	DACS-20-A-S
		High corrosion protection	8072775	DACS-20-A-R3-S
	25 mm	Standard	8072772	DACS-25-A-S
		High corrosion protection	8072776	DACS-25-A-R3-S
	40 mm	Standard	8072773	DACS-40-A-S
		High corrosion protection	8072777	DACS-40-A-R3-S

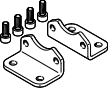
Peripherals

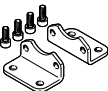
Peripherals overview

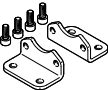


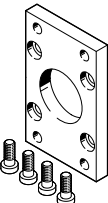
Accessories			→ Link
Type/order code	Description		
[1] Holding brake DACS	Only the flange mounting FNG/FNC/CRFNG is permissible for emergency stop applications/dynamic braking. Additional accessories for this application are available on request.		dacs
[2] Foot mounting HNC/CRHNC	For bearing cap		14
[2] Foot mounting HNG	For bearing cap		14
[3] Flange mounting FNC/CRFNG	- For bearing cap - Suitable for emergency stop applications/dynamic braking		14
[3] Flange mounting FNG	- For bearing cap - Suitable for emergency stop applications/dynamic braking		14
[4] Push-in fitting QS	For connecting compressed air tubing with standard O.D.		qs
[5] Sensor kit DADG	Inductive sensor kit for sensing the status of the clamping function		15

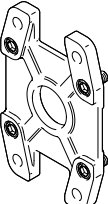
Accessories

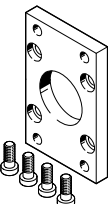
Foot mounting HNC					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 16	193 g	Steel, Galvanised	174370	HNC-40
	For Ø 20	436 g		174372	HNC-63
	For Ø 25	1,009 g		174374	HNC-100

Foot mounting HNG					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 40	3,931 g	Steel, Galvanised	34476	HNG-160

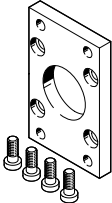
Foot mounting CRHNC – corrosion resistance					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 16	188 g	High-alloy stainless steel	176938	CRHNC-40
	For Ø 20	424 g		176940	CRHNC-63
	For Ø 25	990 g		176942	CRHNC-100

Flange mounting FNC					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 16	291 g	Steel, Galvanised	174377	FNC-40
	For Ø 20	679 g		174379	FNC-63
	For Ø 25	2,041 g		174381	FNC-100

Flange mounting FNG					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 40	3,550 g	Spheroidal graphite cast iron, Painted	34478	FNG-160

Flange mounting CRFNG – corrosion resistance					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 16	291 g	High-alloy stainless steel	161847	CRFNG-40

Accessories

Flange mounting CRFNG – corrosion resistance					
	Description	Product weight	Material mounting	Part no.	Type
	For Ø 20	680 g	High-alloy stainless steel	161849	CRFNG-63
	For Ø 25	2,054 g		161851	CRFNG-100

Proximity switch DADG					
	Description	Cable length	Product weight	Part no.	Type
	For Ø 16, 20	2 m	26 g	8072857	DADG-D-F8-16/20
	For Ø 25		30 g	8072858	DADG-D-F8-25
	For Ø 40		32 g	8072859	DADG-D-F8-40