

The sensors mounted onto the cylinders detect the position of the piston by commutating an electric signal when approaching the magnetic field produced by the magnet incorporated in the piston itself. They are manufactured using two different technologies: electromechanical with Reed bulb; electronic with magneto-resistive effect (normally open with PNP output); upon request with NPN output. The first one with Reed bulb function both in d.c. and a.c.; the second ones, electronic type function only in d.c. 30V max. In both versions the active status is indicated by the lighting of a luminous diode.



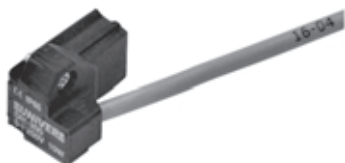
Characteristics	Type	electronic		electromechanical		DF-520 3 wires PNP N.C. more sensitive
		DF-770 3 wires PNP N.O.	DF-220 2 wires N.O.	DF-330 3 wires PNP N.O.	DF-440 3 wires PNP N.C.	
Nominal voltage	V AC/DC	24V DC	24V AC/DC	24V AC/DC	24V AC/DC	24V AC/DC
Working voltage	V AC/DC	7...30V	5...30V	5...30V	5...30V	5...30V
Max. switching current	mA	200	120	500	500	120
Max. switching power	W/VA	6	3,6	6	6	3,6
Max. voltage drop	V AC/DC	0,7V	2,8V	0,1V	0,1V	2,8V
Minimum magnetic field	gauss	30	60	60	60	50
Opening response time	ms	0,08	< 0,5	< 0,5	< 0,5	< 0,5
Closing response time	ms	0,03	< 1	< 1	< 1	< 1
Electric life with resistive load	Cicli	>10 <sup>9</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>
State indicator	Red	LED	LED	LED	LED	LED
Cable number and section	mmq	3 x 0,14	2 x 0,14	3 x 0,14	3 x 0,14	3 x 0,14
Electric circuit (page 4)	Type	C	A	C	D	D
Protection degree	DIN40050	IP65				
Working temperature	°C	- 20 + 80 °C				

### Part numbers

	DF-770	DF-220	DF-330	DF-440	DF-520
- Sensor with cable 3 m					
- Sensor with cable 20 cm male connector M08	DF-770M08	DF-220M08	DF-330M08	DF-440M08	DF-520M08
- Sensor with cable 20 cm male connector M12	DF-770M12	DF-220M12	DF-330M12	DF-440M12	DF-520M12
- Cable extension M08 3 m 3 poles	DHF-033M08				
- Cable extension M08 5 m 3 poles	DHF-053M08				
- Cable extension M12 3 m 3 poles	DHF-033M12				
- Cable extension M12 5 m 3 poles	DHF-053M12				
- Cable clamping	DF -001				

**For the use of 3-pole cable extensions M08 and M12 with magnetic sensor DF-220, DF-220M08, DF-220M12 exclude blue wire when connecting.**

**Note:** observe polarity for d.c. use, avoid that magnetic fields affect the sensor, for cables with length exceeding 10 m insert filter KM-008200, for use with inductive loads foresee suitable filters on the load itself.



Characteristics	Type	electronic	electromechanic		
		DH-700 3 wires PNP N.O.	DH-100/KM... 2 wires N.O.	DH-200 2 wires N.O.	DH-500 2 wires PNP N.C. more sensitive
Nominal voltage	AC/DC	24V DC	-	-	-
Working voltage	AC/DC	7...30V	5...250V	5...250V	5...250V
Max. switching current	mA	200	1000	500	500
Max. switching power	W/VA	6	30	10	10
Max. voltage drop	AC/DC	0,7V	2,8V	2,8V	2,8V
Minimum magnetic field	gauss	30	85	85	60
Opening response time	ms	0,08	< 0,5	< 0,5	< 0,5
Closing response time	ms	0,03	< 1	< 1	< 1
Electric life with resistive load	Cycles	>10 <sup>9</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>	>10 <sup>7</sup>
State indicator	RED	LED	LED	LED	LED
Cable number and section	mmq	3 x 0,25	2 x 0,25	2 x 0,25	2 x 0,25
Electric circuit (page 4)	Type	C	A	A	A
Protection degree	DIN40050	IP65			
Working temperature	°C	- 20 +80			

**Part numbers**

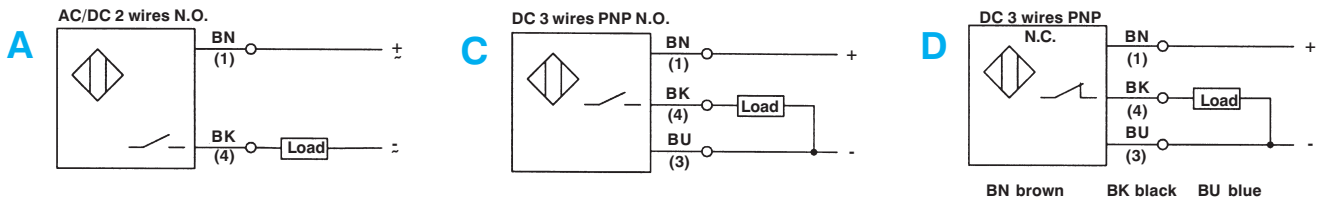
	PNP	DH-700	DH-100	DH-200	DH-500
- Cable 3 m					
- Sensor with cable 3 m	NPN	DH-700A	-	-	-
- Sensor with cable 5 m	PNP	DH-700L5	DH-100L5	DH-200L5	DH-500L5
- Sensor with cable 10 m	PNP	DH-700L10	DH-100L10	DH-200L10	DH-500L10
- Sensor with cable 20 cm male connector M08 60V	PNP	DH-700M08	-	DH-200M08	DH-500M08
- Sensor with cable 20 cm male connector M12	PNP	DH-700M12	-	DH-200M12	DH-500M12
- Cable extension M08 3 m 60V max 3 poles	DHF-033M08				
- Cable extension M08 5 m 60V max 3 poles	DHF-053M08				
- Cable extension M12 3 m 3 poles	DHF-033M12				
- Cable extension M12 5 m 3 poles	DHF-053M12				

**For the use of 3-pole cable extensions M08 and M12 with magnetic sensor DH-100/KM..., DH-200, DH-500 exclude blue wire when connecting.**

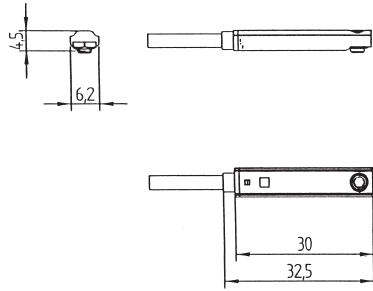
**Note:** observe polarity for d.c. use, avoid that magnetic fields affect the sensor, for cables with length exceeding 10 m insert filter KM-008200, for use with inductive loads foresee suitable filters on the load itself. The cable extension can be supplied with lengths upon request. For those versions without LED add suffix E to the part number.



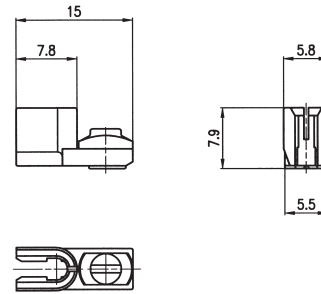
**Electric circuits**



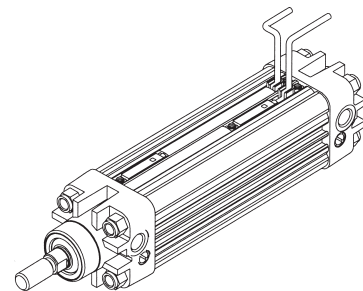
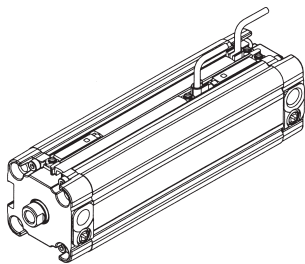
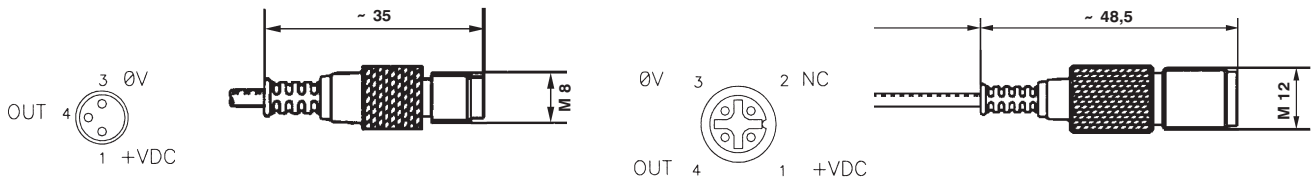
**Overall dimensions DF-...**



**Cable clamping DF-001**

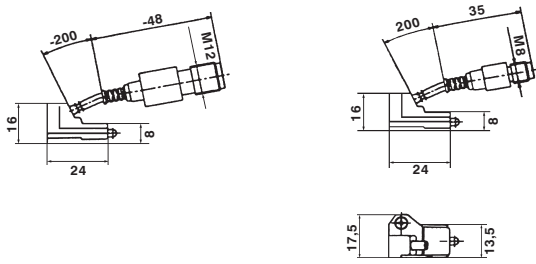


**Male connector M08, M12**



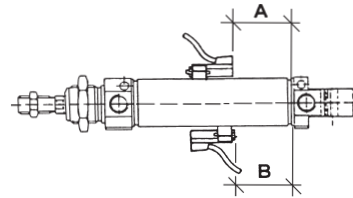


**Overall dimensions DH...**

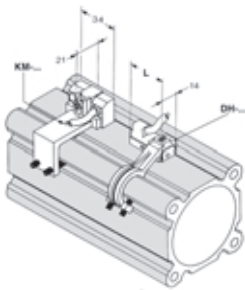


**Correct mounting**

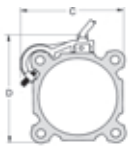
The magnetic sensor is mounted onto the cylinder by means of a special clamp or bracket or simply inserted in the groove of the cylinder barrel.



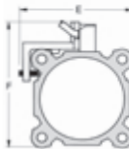
**ISO cylinders K series**



DH-....



KM-....



Cyl. Ø	A-B	C	D	Bracket part number	E	F	Sensor + bracket part number
32	4 - 4	50	57	DH-K032050	50	62	KM-032050
40	6 - 6	56	63		55	67	
50	6 - 6	64	74		65	77	
63	6 - 7	81	87	DH-K063125	80	82	KM-063100
80	9 - 10	96	104		97	109	
100	10 - 10	114	125		114	126	
125	18 - 18	138	150	DH-K160200	137	149	KM-125000
160	25 - 27	180	180				
200	24 - 26	200	220				

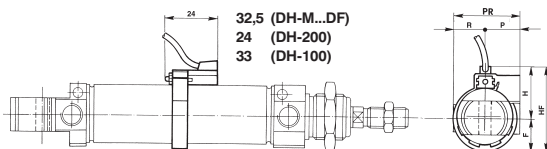
**Microcylinders M series**



DH-....



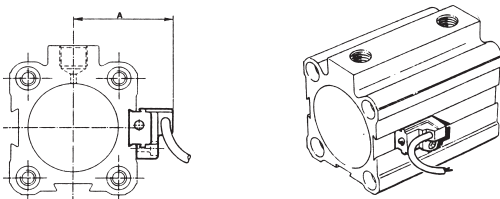
DH-M...DF



Cyl. Ø	A-B	F	H	HF	P	R	PR	M series part number
10	11 - 11	12,5	22,5	35	17	10	27	DH-M10
12	12,5 - 12,5	11,5	23,5	35	17	10	27	DH-M12
16	14 - 14	15	25	40	18	13	31	DH-M16
20	18,5 - 18,5	19	27	46	18	17	35	DH-M20
25	19 - 19	18	30	48	20	17	37	DH-M25

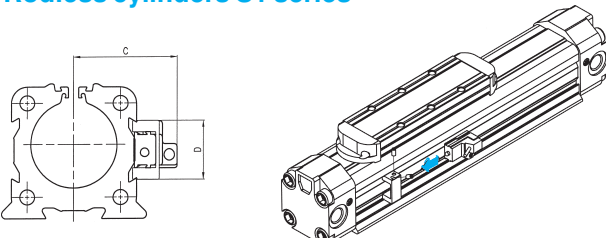
To order the holder for the recessed sensor DF... Series add suffix DF to the part number.

**Short-stroke cylinders W series (no fixing necessary)**



Cyl. Ø	16	20	25	32	40	50	63	80	100
A-B	8-8	9-9	11-10	11-10	7-7	6-6	5-5	8-7	11-11
A	26,8	28,8	31,3	35,3	39,5	44	52	60,5	71

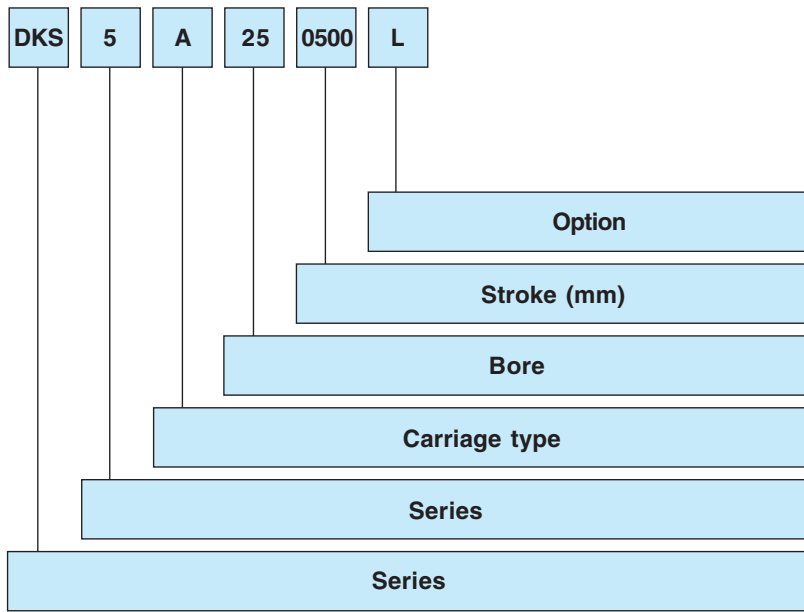
**Rodless cylinders S1 series**



Cyl. Ø	A-B	C	D	Bracket part num.
25	25 - 35	34	21	DH-S25
32	35 - 35	39	22	DH-S32
40	50 - 50	46	29	DH-S40
50	60 - 60	54	35	DH-S50



**Mounting bracket for rodless cylinders S -V Series**



**SERIES**

**DKS** = Mounting bracket magnetic sensor

**SERIES**

**5** = Rodless cylinder S5 - VL1 Series

**CARRIAGE OPTION**

**A** = Standard carriage (S5 Ø 25 - 32)

**C** = Medium carriage (S5 - VL1)

**D** = Long carriage (S5 - VL1)

**F** = Double medium carriage (VL1)

**BORE**

25 - 32 - 40 - 50 mm

**STROKE**

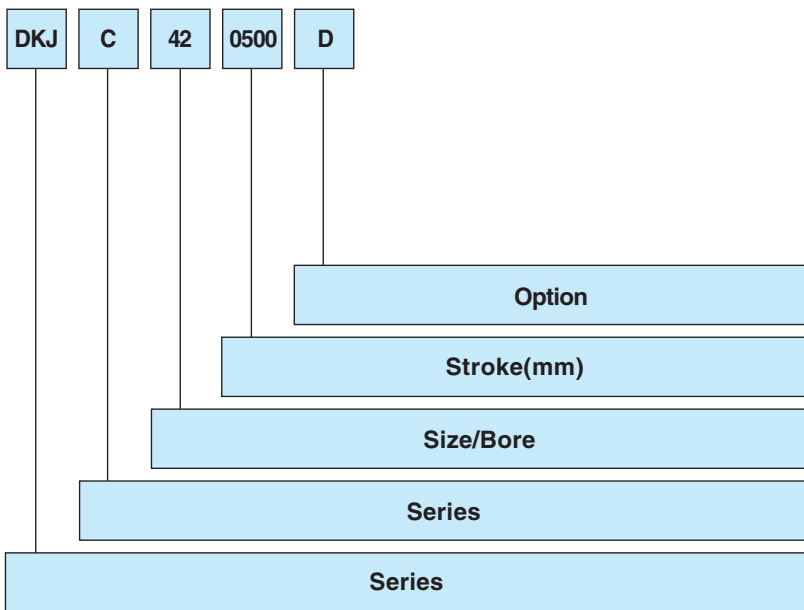
Length in mm

**OPTION**

**D** = Double mounting option for exposed reed switches

**NOTE:** magnetic switch mounting brackets are supplied with accessories for assembling. Item DH-200 (magnetic sensor) must be ordered separately.

**Mounting bracket for slide units J Series**



**SERIES**

**DKJ** = Mounting bracket magnetic sensor

**SERIES**

**A** = Slide unit for ISO 6431 - 6432 cylinders J14 - J14B - J16 - J16B -J17 -J17B

**C** = Slide unit for rodless cylinders with standard carriage J30

**D** = Slide unit for rodless cylinders with long carriage J31

**E** = Slide unit for short stroke cylinders J51 - J52 - J53 J54 - J56

**SIZE/BORE**

Slide unit size	Ø Cylinder
<b>0</b> =16	<b>0</b> =16
<b>2</b> =25	<b>2</b> =25
<b>3</b> =32	<b>3</b> =32
<b>4</b> =40	<b>4</b> =40
<b>5</b> =50	<b>5</b> =50
<b>6</b> =63	<b>6</b> =63
<b>7</b> =80	<b>7</b> =80
<b>8</b> =100	<b>8</b> =100

**STROKE**

Length in mm

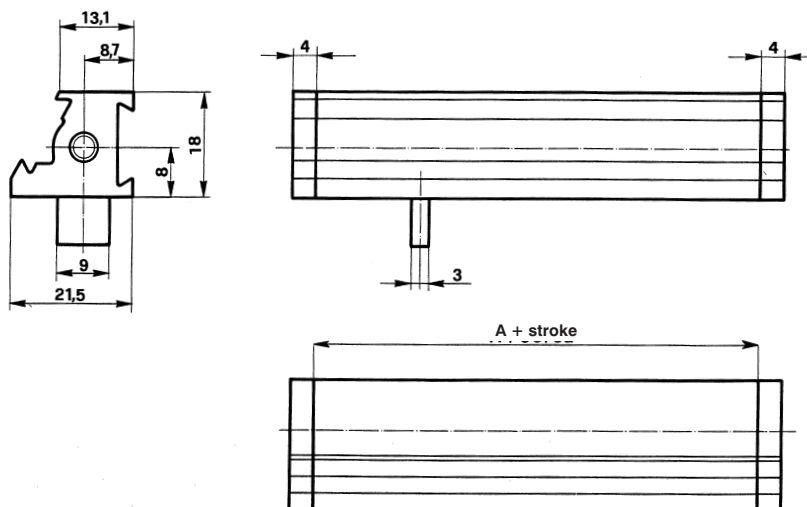
**OPTION**

**D** = Mounting option for exposed double reed switches, with right trailing rod

**NOTE:** magnetic switch mounting brackets are supplied with accessories for assembling. Item DH-200 (magnetic sensor) must be ordered separately.



Mounting bracket with double reed switches at sight mounting option DKS...D/ DKJ...D Series



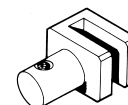
Mounting accessories standard supplied for:

S5 - VL1 Series



Part number  
DKK62

J30 - J31 Series



Cyl. Ø	Part number
32-40	DKK75040
50	DKK75050
63-80	DKK75080

to be coupled with mounting bracket DKJ...D Series

Dimensions of mounting bracket for rodless cylinders (DKS...D Series) and slide units for rodless cylinders (DKJ...D Series).

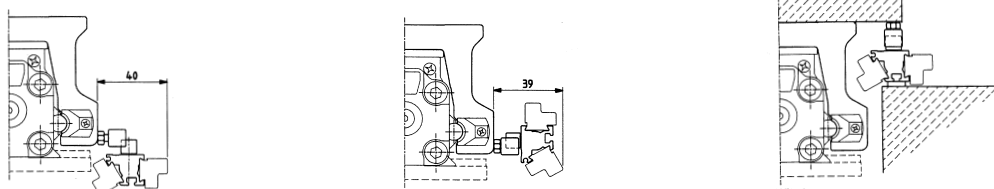
Cyl. Ø	Rodless cylinders					
	S5 series			VL1 series		
	A + STROKE					
	S	M	L	M	L	2 M
25	172	201	267	201	267	366
32	212	247	342	247	342	453
40	-	292	404	292	404	535
50	-	364	504	364	504	680

Size	Slide units for rodless cylinder		
	J30 - J31 series		
	A + STROKE		
	Cyl. Ø	J30	J31
40	25	200	295
50	32	250	380
63	40	300	450
80	50	350	550

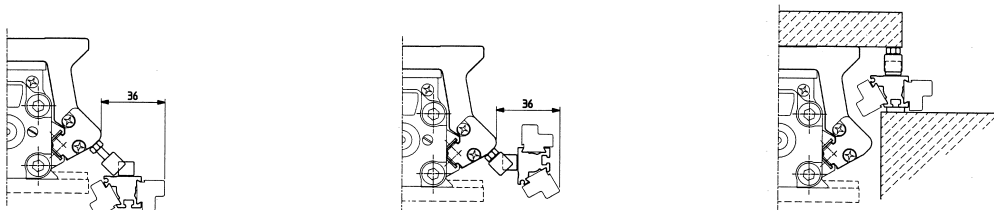
Carriage option: S = Standard  
M = Medium  
L = Long  
2M = Double medium

◆ The mountings of the brackets onto the slide units, vary according to the slide unit size.

Assembling example with rodless cylinders S5 Series

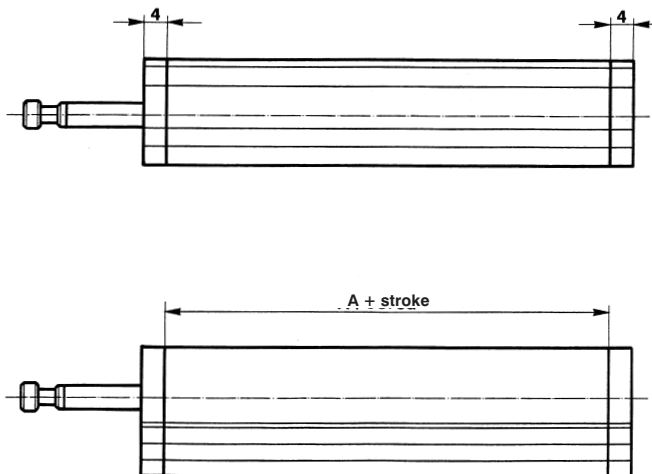
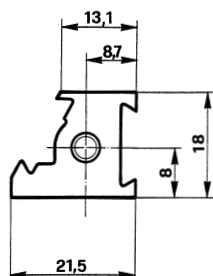


Assembling example with rodless cylinders VL1 Series





Mounting bracket with double reed switches at sight mounting option  
DKJ...D Series



Adaptor for:  
J14-J16-J17  
Series



Part number  
DKK72

Adaptor for:  
J51-J52-J53-J54-J56  
Series



Cyl. Ø	Part number
25	DKK74025
32	DKK74032
40	DKK74040
50	DKK74050
63	DKK74063
80	DKK74080
100	DKK74100

Dimensions of mounting brackets for slide units for short-stroke cylinders and slide units for ISO 6431 - 6432 cylinders (DKJ...D Series).

Size	Cyl. Ø	Slide units for short-stroke cylinders
		J51/J52/J53/J54/J56 series
<b>A + STROKE</b>		
25	20	52
32	25	52
40	32	52
50	40	52
63	50	52
80	63	52
100	80	52

Size	Slide units for ISO 6431 - 6432 cylinders
	J14/J16/J17 series
<b>A + STROKE</b>	
16	80
25	100
32	100
40	100
50	100
63	100
80	100
100	100

Assembly example with slide unit J Series

