



Compact double-acting hydraulic cylinders are suitable for industrial automation applications where a compact and highly modular construction is required also for heavy duty applications.

Also available with built-in magnetic sensors to control the piston position or with anti-rotation device and external mechanical limit switches to control the end positions of the rod.



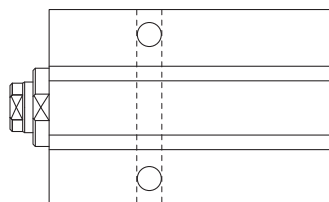
	Light alloy		Heavy duty application
Material	Special aluminium alloy		Steel
Bore mm	from 25 to 63	from 80 to 100	from 25 to 100
Operational pressure bar	160	100	250
Standard strokes mm	20 - 50 - 80 - 100 (other strokes on request)		

For piston speeds above 0.1 m/s, it is recommended to limit the stroke externally, avoiding the piston hitting the bushing or rear cap.

Pressure peaks, shocks and cyclic stresses can reduce the life of the aluminium alloy RP cylinder. In such cases, we recommend that you consider using steel RQ cylinders.

LIGHT ALLOY COMPACT CYLINDER SERIES

RP

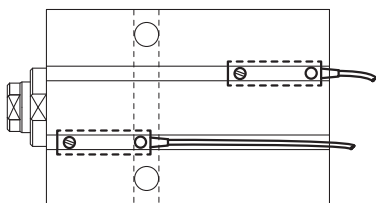


Double-acting hydraulic cylinders in high-strength aluminium alloy with anti-wear treatment.

Suitable for industrial automation in non-severe conditions, when a lightweight, compact and highly modular construction is required.

LIGHT ALLOY COMPACT CYLINDER SERIES WITH MAGNETIC SWITCHES

MP

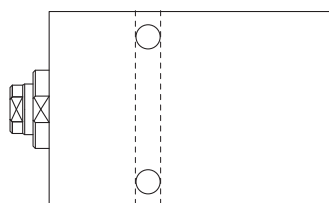


Double-acting hydraulic cylinders made of high-strength aluminium alloy with anti-wear treatment.

One or more magnetic switches can be positioned along the prepared seats to detect the passage of the piston in correspondence with SP switch. Special programmable sensors are available on request.

HEAVY DUTY COMPACT CYLINDER SERIES

RQ



Heavy duty steel double-acting hydraulic cylinders. Suitable for industrial automation applications where a robust, compact and highly modular construction is required.

Also available in version with anti-rotation device and external mechanical limit switches to control the end positions of the rod.

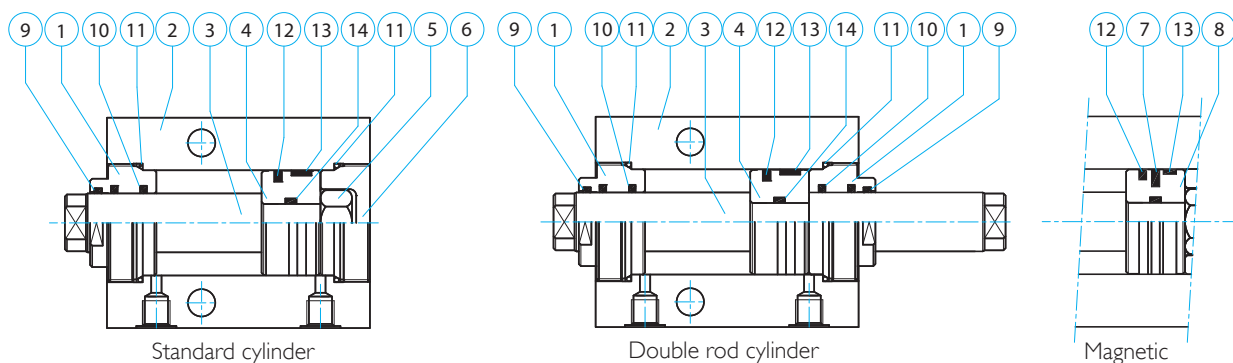
AVAILABLE SEALS

Seals code		Performances					Fluid		
		High sealing	Low friction	Max speed	Temp °C		Hydraulic oil	Phosphoric esters	HFC-fluid
					Min	Max			
Only for RP and MP	S	√		0.5 m/s	-20	+80	√		
	L		√	1 m/s	-20	+80	√		
	H		√	1 m/s	-20	+150	√	√	
	G		√	1 m/s	-20	+80			√

For speeds and temperatures exceeding the indicated limits, please contact our technical department.



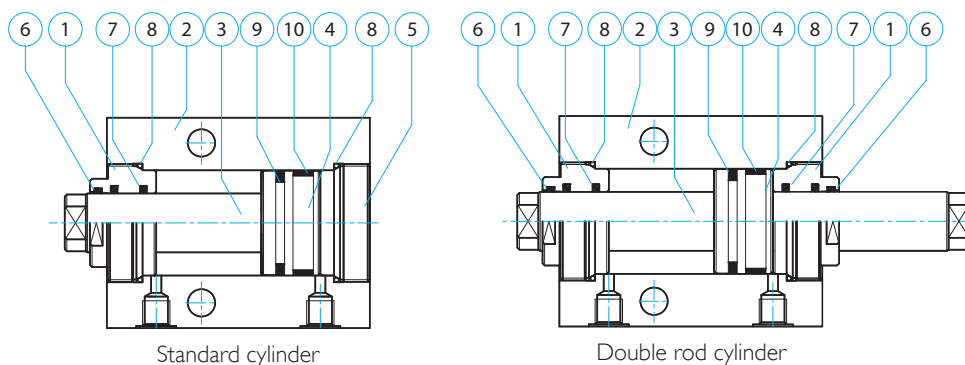
RP/MP SERIES – LIGHT ALLOY



Component		Material	
1	Guide bushing	Bronze	
2	Cylinder body	Special aluminium alloy	
3	Rod	Chromeplated steel	
4	Piston	Steel	
5	Rod nut	Steel	
6	Rear cap	Steel	
7	Magnet		
8	Magnetic piston (MP)	Stainless steel	

	Component	Groove	Material			
			S	L	H	G
9	Rod wiper		NBR + PTFE	NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
10	Rod's double seal	ISO 7425/2	NBR + PTFE	NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
11	Body seal		NBR + PTFE	NBR + PTFE	Viton® + PTFE	NBR + PTFE
12	External piston seal	ISO 7425/1	NBR + PU	NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
13	Piston guide		Resin	Resin	Resin	Resin
14	Internal piston seal		NBR	NBR	Viton®	NBR

RQ SERIES – FOR HEAVY DUTY APPLICATIONS

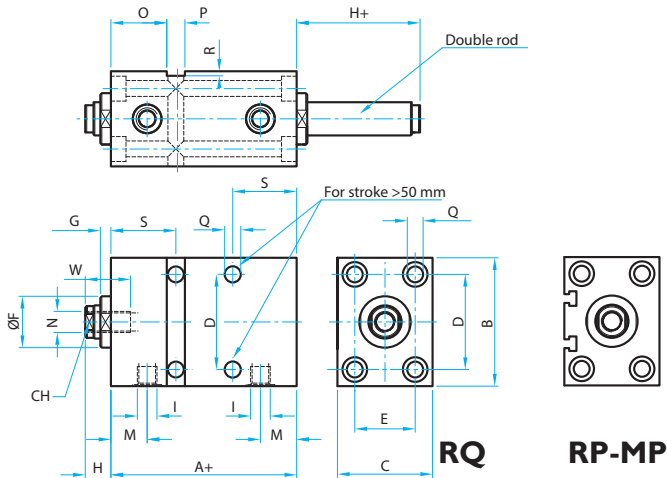


Component		Material	
1	Guide bushing	Bronze	
2	Cylinder body	Steel	
3	Rod	Chromeplated steel	
4	Piston	Steel	
5	Rear cap	Steel	

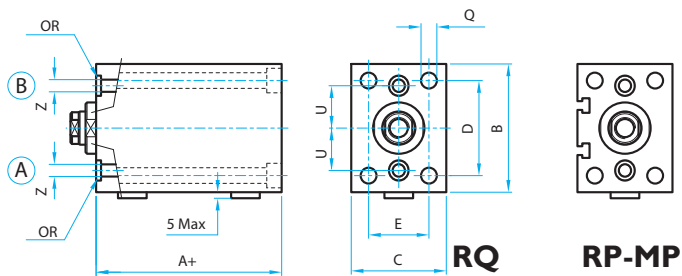
	Component	Groove	Material		
			L	H	G
6	Rod wiper		NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
7	Rod's double seal	ISO 7425/2	NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
8	Body seal		NBR + PTFE	Viton® + PTFE	NBR + PTFE
9	Piston seal	ISO 7425/1	NBR + PTFE	Viton® + PTFE	NBR + PTFE CG
10	Piston guide		Resin	Resin	Resin



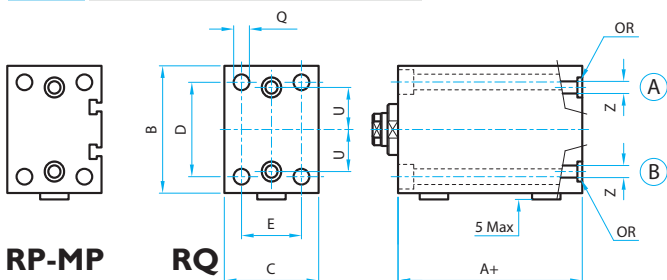
OIL PORTS

X Threaded oil ports

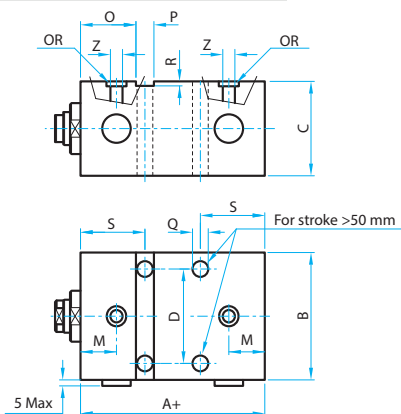
Bore	25	32	40	50	63	80	100
Rod	18	22	22	28	28	36	45
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
CH	15	19	19	22	22	30	36
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
F f8	32	34	34	42	50	60	72
G	6.5	8	7	8	7	7	8
H	14	15	17	20	20	20	25
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35
N	M10	M12	M14	M20	M20	M27	M33
O	32	34	37	37.5	47.5	50	60
P 8 ¹	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
W	23	23	30	30	30	40	50

A Front oil ports with OR

Bore	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106 (610)	OR106 (610)	OR106 (610)	OR108 (611)	OR108 (611)	OR108 (611)	OR108 (611)
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

A Pulling force**B** Pushing force**B** Rear oil ports with OR

Bore	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
OR	OR106 (610)	OR106 (610)	OR106 (610)	OR108 (611)	OR108 (611)	OR108 (611)	OR108 (611)
Q	8.5	10.5	10.5	13	13	17	17
U	25.5	30	32.5	40	47.5	59	70
Z	4	4	5	7	7	7	7

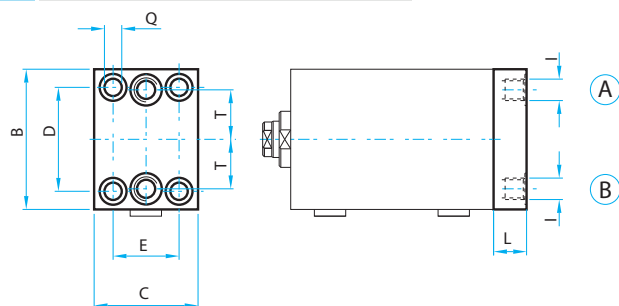
A Pulling force**B** Pushing force**E** Lateral oil ports with OR

Bore	25	32	40	50	63	80	100
A	57+	60+	73+	75+	85+	100+	110+
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
M	17	18	23.5	23.5	26	30	35
O	32	34	37	37.5	47.5	50	60
OR	OR106 (610)	OR106 (610)	OR106 (610)	OR108 (611)	OR108 (611)	OR108 (611)	OR108 (611)
P 8 ¹	10	12	12	15	15	20	20
Q	8.5	10.5	10.5	13	13	17	17
R	2	3	3	5	5	5	5
S	37	40	43	45	55	60	70
Z	4	4	5	7	7	7	7



OPTIONS

BU Connection plate for "B" version

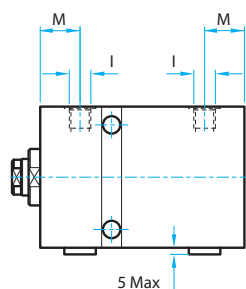


Bore	25	32	40	50	63	80	100
B	65	75	85	100	115	140	170
C	45	55	63	75	90	110	140
D	50	55	63	76	90	110	135
E	30	35	40	45	55	75	95
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
L	20	20	20	24	30	30	30
Q	8.5	10.5	10.5	13	13	17	17
T	16	20	30	37	40	50	65

(A) Pulling force

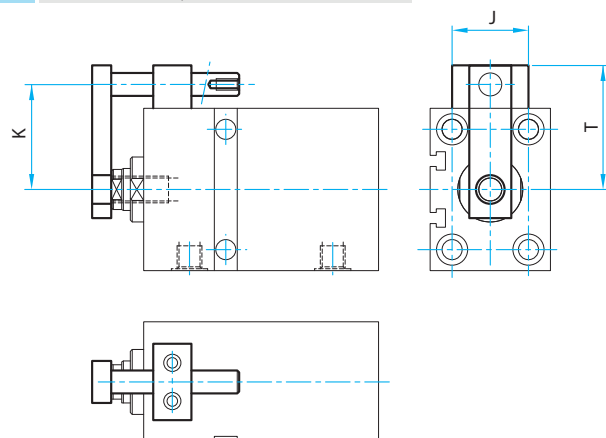
(B) Pushing force

AS Additional connections on opposite side



Bore	25	32	40	50	63	80	100
I	G 1/4"	G 1/4"	G 1/4"	G 1/4"	G 3/8"	G 1/2"	G 1/2"
M	17	18	23.5	23.5	26	30	35

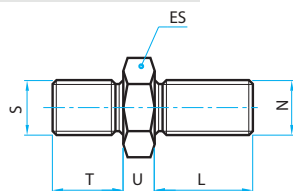
AR Antirotation system



Bore	25	32	40	50	63	80	100
J	40	40	40	40	40	40	50
K	45	50	55	62.5	70	82.5	97.5
T	55	60	65	72.5	80	92.5	107.5

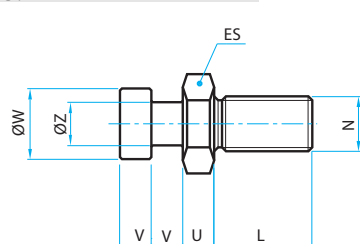
ROD END ACCESSORIES

EM Male rod end



Bore	25	32	40	50	63	80	100
Code	EM10	EM12	EM14	EM20	EM20	EM27	EM33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
S	M10x1.25	M12x1.25	M14x1.5	M20x1.5	M20x1.5	M27x2	M33x2
T	14	16	18	28	28	36	45
U	6	7	8	9	9	12	14

ET Floating joint

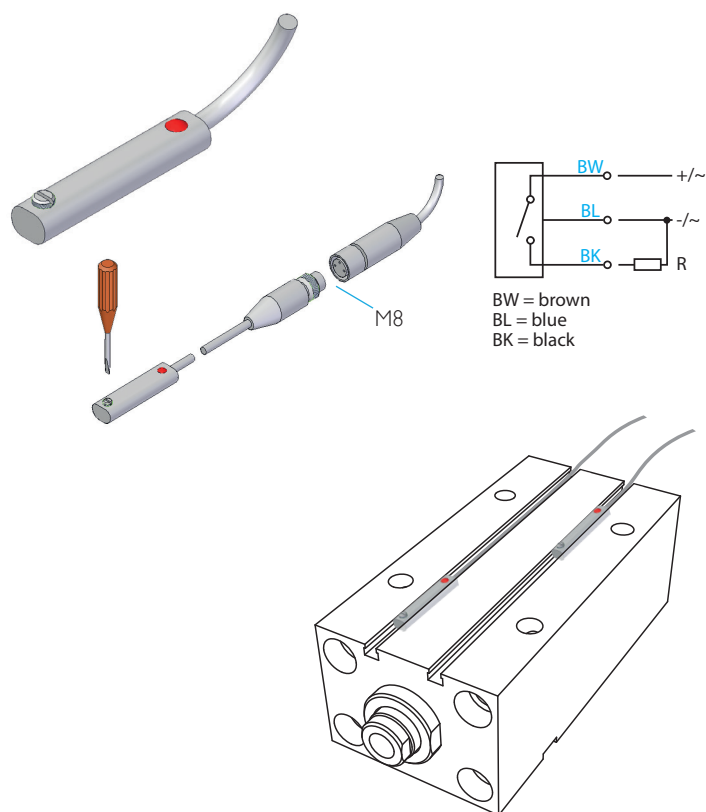


Bore	25	32	40	50	63	80	100
Code	ET10	ET12	ET14	ET20	ET20	ET27	ET33
ES	17	19	22	30	30	36	46
L	20	20	25	30	30	40	50
N	M10	M12	M14	M20	M20	M27	M33
U	6	7	8	9	9	12	14
V	7	8	8	10	10	12.5	16
W	16	18	18	22	22	28	35
Z	10	11	11	14	14	18	22



MAGNETIC SWITCHES

SP REED switches



Magnetic switches detect the moment the piston passes under them, closing the electric circuit.

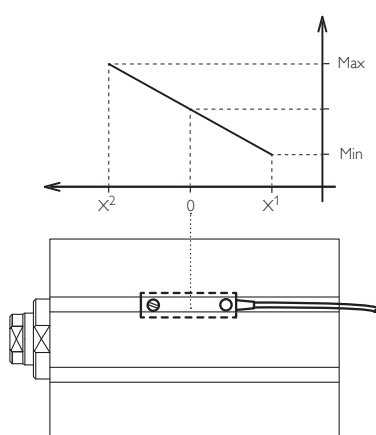
Voltage	3-30 V AC/DC
Max current (at 25°C)	0.2 A
Switch on time	0.5 ms
Switch off time	0.5 ms
Electric life	10 ⁷ pulse
Protecting rating	IP 67 EN60529
Operating temperature	-10 / +70 °C
Visual signal	LED
Cable	3 x 0.25 mm ²
Cable length	5 m

Voltage and current values must never exceed the values given in the table. Current peaks can be caused by capacitive loads (e.g. cables longer than 3 m). Voltage peaks can be caused by inductances (e.g. relays, solenoid valves, contactors, etc.).

Magnetic distortions may be caused by ferrous masses (e.g. cylinder seats inside moulds) or by the presence of strong magnetic fields (e.g. electric motors, coils, inverters, etc.).

False contacts can occur in the event of strong vibrations.

COMPACT CYLINDERS WITH SPECIAL SENSORS



On request, by contacting our technical department, special sensors are available that can detect the piston within a programmable range, continuously providing its position via a digital output signal.

It is also feasible to program the closing of the circuit in two intervals within the reading range, which can also be modified via software on board the machine.

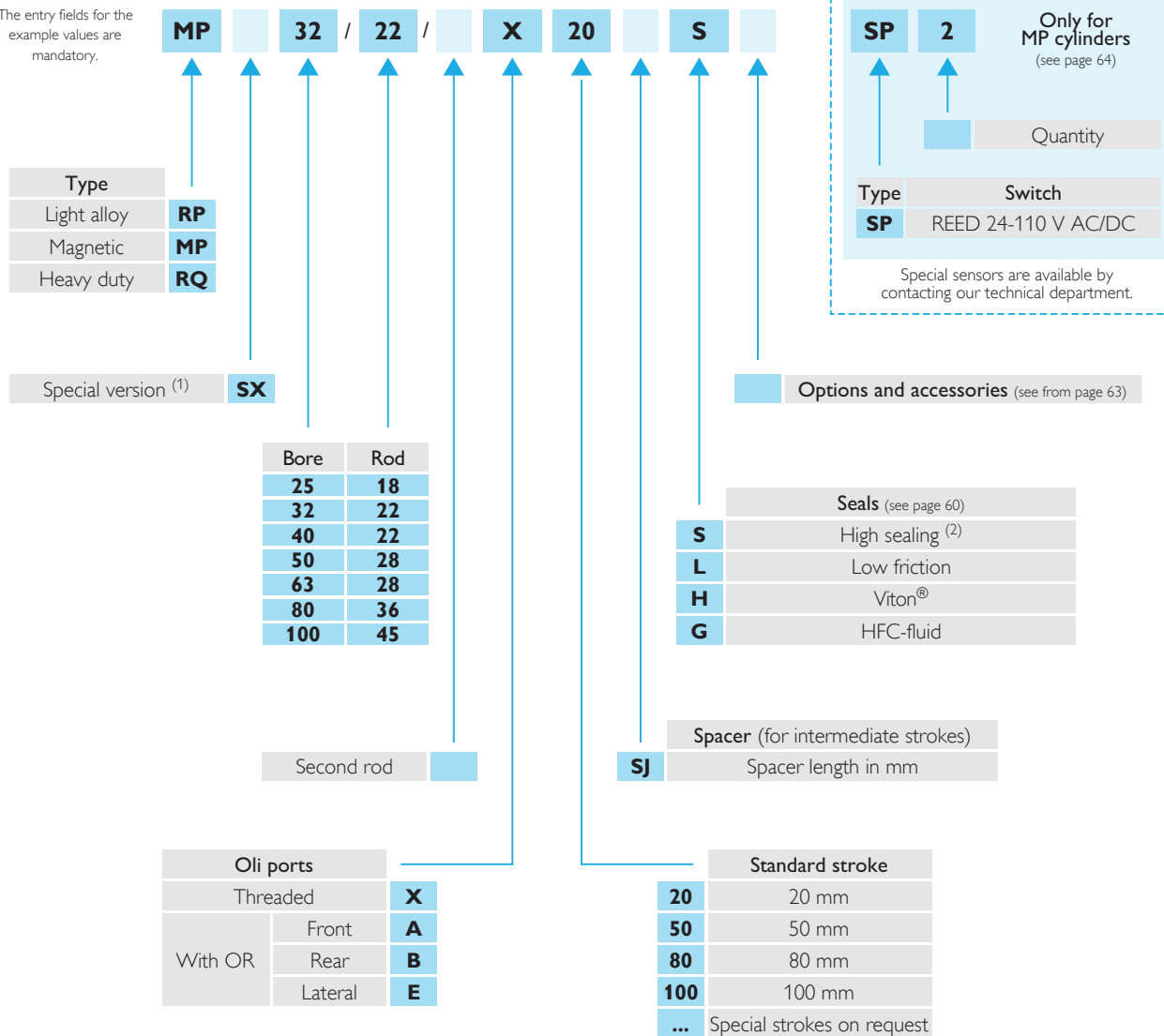
The digital connection allows the sensors to send numerous operating parameters, such as the working temperature.

They are particularly suitable for compact short-stroke hydraulic cylinders; only one sensor needs to be mounted instead of two.



CODE COMPOSITION

The entry fields for the example values are mandatory.



(1) Indicate SX whenever the cylinder has special requests or executions by filling in the options section of the code, followed by our drawing number, if any.
(See list of available options and accessories from page 63).

(2) Available for RP and MP cylinders only.