

MPF SERIE



For control unit, switching programs



- ➔ Wire-wound potentiometer (5W)
- ➔ Resistance 100R ... 100K
- ➔ Adjustable limit switches
- ➔ Program channels (free settings) 1-4

Product description

High class motorized potentiometer with fine draw potentiometer. Easy and fast programmable of each channel. Different cycle time are available for maximum use of potentiometer range. With the removable turning knob it will be easy to mount them to a front plate in control enclosure.

Application

Any time controlled application which has to be controlled with micro switches. Usable in motors, locking and emergency backup generators.

Technical Data

Cycle time	(see order code)
Cam	NK
Adjustable limit switches	NK4101/20°
Program channels (free setting)	NK4201/180°
Snap action switch	KS25B4
Mechanical life time	> 20 Mill.
Switching frequency	5 Hz
Contact chatter time	<4 ms
Actuating speed	>10 µm/s
Contact break	0,6 mm
Contact pressure	0,2 N
Temperature range	-40 °C +85 °C
MTBF (IEC 60050)	
Switch	ON/OFF 10 Mio cycle
Mechanical	200'000l hour
Shock resistance	2500m/s ² , 6ms IEC 68-2-27
Vibrations resistance	200 m/s ² , 10...2000 Hz IEC 68-2-6
Humidity	40% rh

1-Turn Motorpotentiometer front mounting

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Microswitch



Type: KS25B4
 Function: Change over (NO / NC / COM)
 Connection: Cable shoe 2.8x0.55mm
 Contact material: Silver plated

Cams



Type: NK4201.180°
 Function: double cam
 Adjustment range: 6 - 180° (free programmable)
 Material: Grilon T300

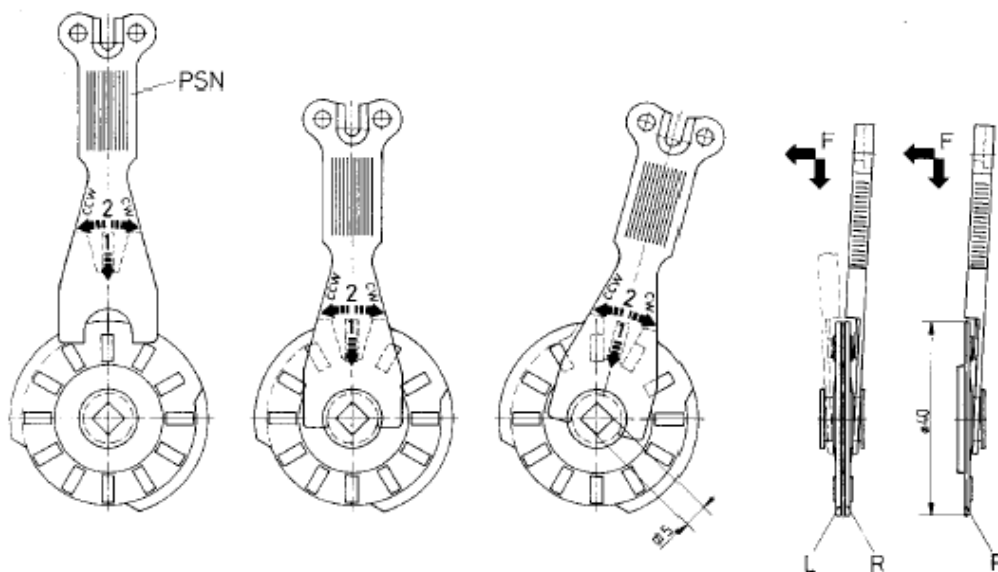
Potentiometer



Type: DPC
 Resistant: See Order Code
 Power: 5W
 Turning angle: 330°

Adjusting guideline of NK cams

To adjust the NK cam use PSN programming Key which is included in the shipment. Put them to the NK cam and turn until you get the right switching point of your switch.



MPP SERIE

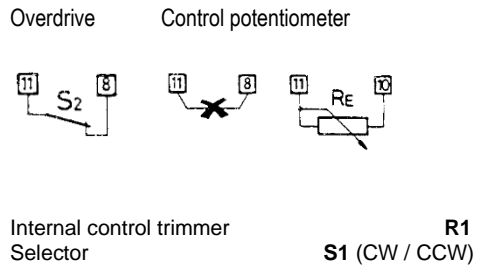
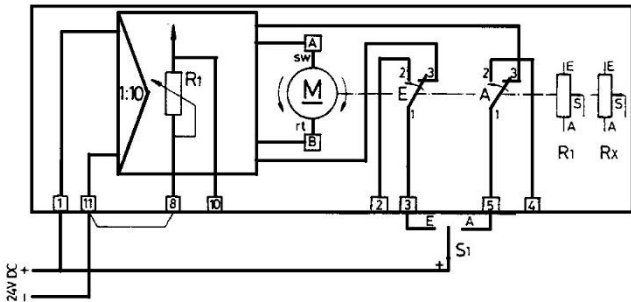


Stop and control units

The stop and control units can be optionally adapted to this motor potentiometer. On the one hand, they can be used to quickly stop the engine for more precise control as well as to vary the speed or start-up time.

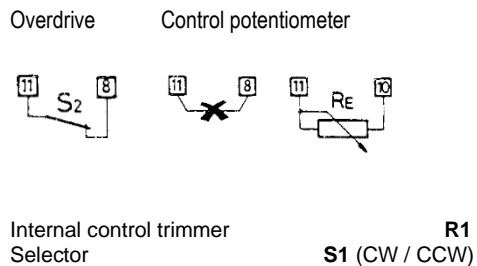
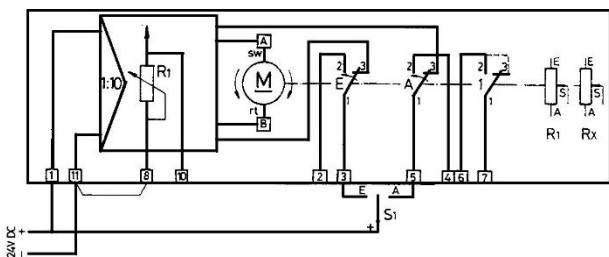
PRSG.2 Control Print Stop and Switch E and A

- Stop and speed control unit
- Speed control unit: 1:1 to 1:8 (+/-10%)
- Number of end positions: 2 limit switches
- Number of useful contacts: none
- Flow time: 20ms
- No-load current: 30mA
- Supply voltage: 24VDC
- Connection: Terminal block (max. 1.5mm²)



PRSG.3 Regulator Print Stop and Switches E and A + 1

- Stop and speed control unit
- Speed control unit: 1:1 to 1:8 (+/-10%)
- Number of end positions: 2 limit switches
- Number of useful contacts: 1 user contact (adjustable)
- Flow time: 20ms
- No-load current: 30mA
- Supply voltage: 24VDC
- Connection: Terminal block (max. 1.5mm²)

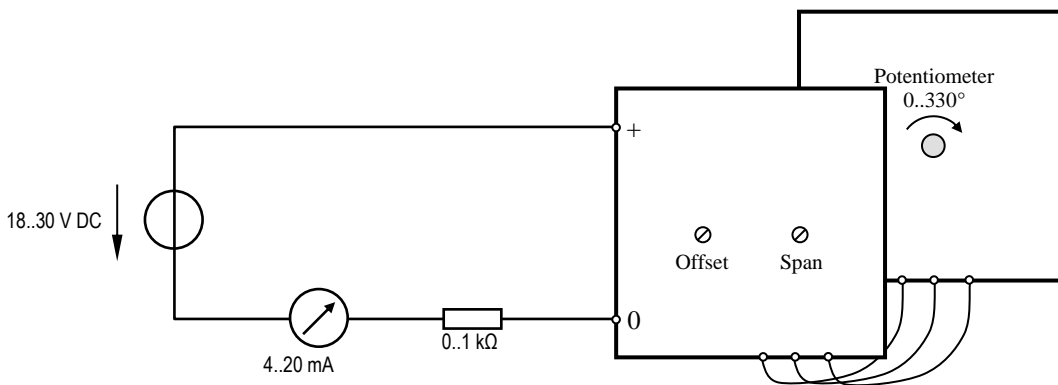


MPP SERIE



MR265 4-20mA Power Interface 2 Conductor Engineering

Connection type	2- Conductor technology
Supply voltage:	18...30 V DC (specifications apply to 24V)
Power consumption:	4...20 mA
Max. Output Power:	400 mW
Max. Load:	1 k Ω
Output:	4...20 mA
Linearity:	$\pm 0.5 \%$
Temperature coefficient:	100 ppm/K
Temperature range:	0...70°C

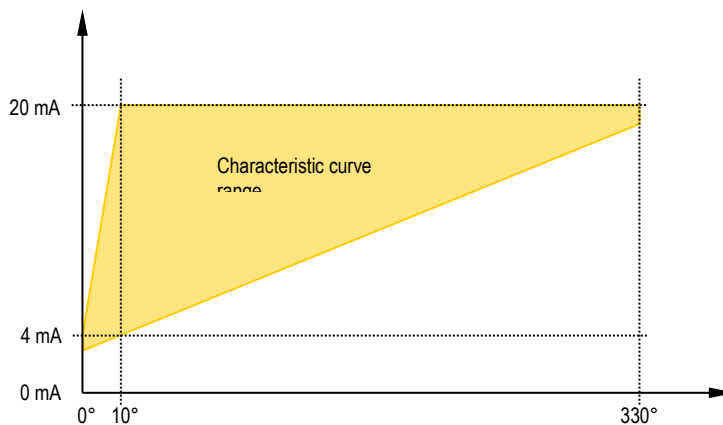


Settings

The shaft of the potentiometer can be rotated a maximum of 330°. The output characteristic of 4..20 mA can be set as follows.

Min. Offset:	0°
Max. Offset:	10°
Min. steepness:	48.5 $\mu\text{A}/^\circ$
Max. steepness:	1.6 $\text{mA}/^\circ$

Based on these values, the characteristic curve range is displayed, in which the line of the characteristic curve can be freely placed.

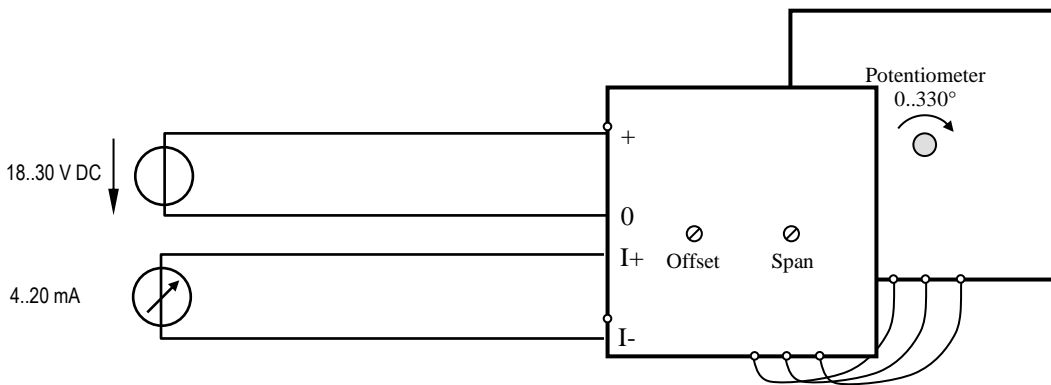


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MR265 4-20mA Power Interface 4 Wires, GND Power Supply, 2 Sensor Lines

Connection type	4- Conductor technology
Supply voltage:	18...30 V DC (specifications apply to 24V)
Power consumption:	4...20 mA
Max. Output Power:	400 mW
Max. Load:	1 kΩ
Output:	4...20 mA
Linearity:	± 0.5 %
Temperature coefficient:	100 ppm/K
Temperature range:	0...70°C

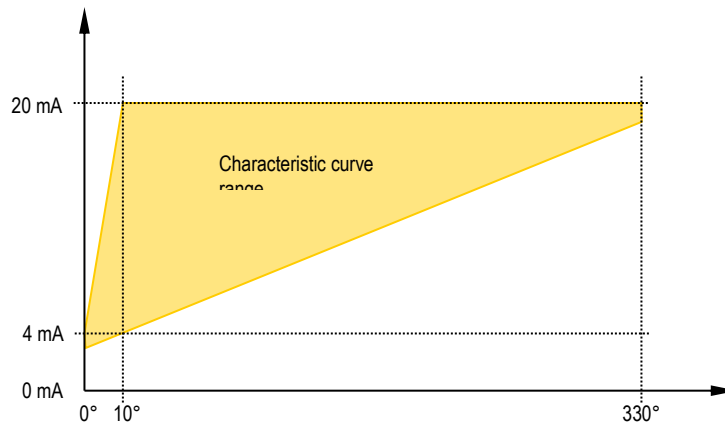


Settings

The shaft of the potentiometer can be rotated a maximum of 330°. The output characteristic of 4..20 mA can be set as follows.

Min. Offset:	0°
Max. Offset:	10°
Min. steepness:	48.5 μA/°
Max. steepness:	1.6 mA/°

Based on these values, the characteristic curve range is displayed, in which the line of the characteristic curve can be freely placed.



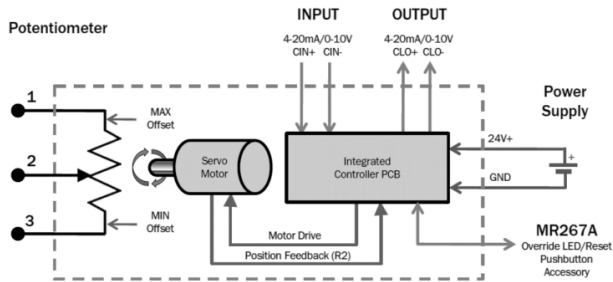
10-Turn Motorpotentiometer for backward mounting

MPRZ SERIE

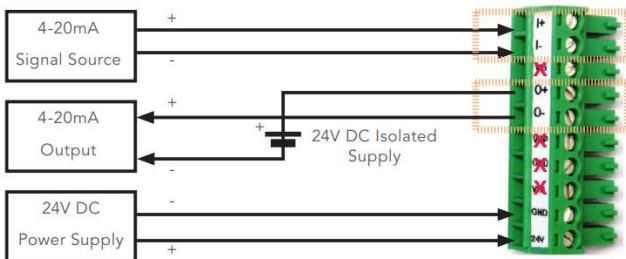


MR267 4-20mA Current Input for Drive Isolated

Supply voltage:	20...26 V DC (specifications apply to 24V)
Power consumption	max. 500mA
Input signal:	4-20mA
Output:	4-20mA
Entrance isolation	1kV
Position accuracy:	0.25% typical
Ramp-up time:	10 seconds to 120 seconds
Minimum Setting:	0% to 25%
Maximum setting:	52% to 100%



Connection diagram:



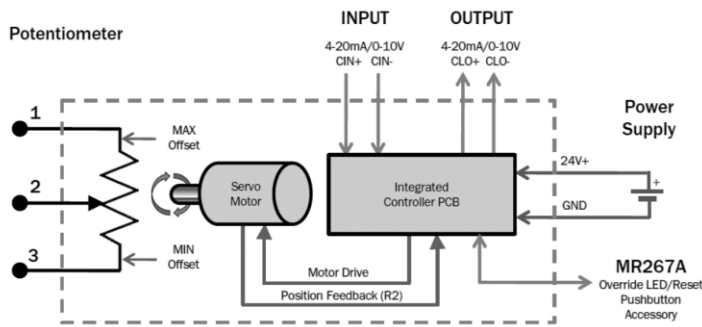
10-Turn Motorpotentiometer for backward mounting

MPP SERIE

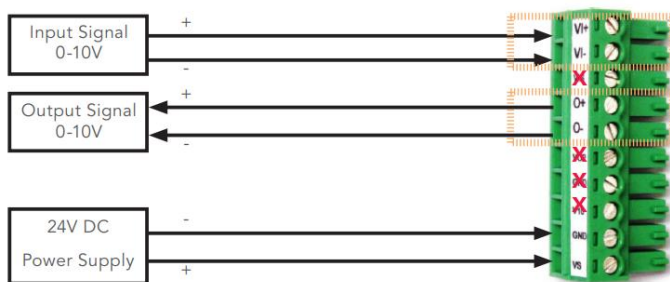


MR267 0-10V Voltage Interface for Control Isolated

Supply voltage:	20...26 V DC (specifications apply to 24V)
Power consumption	max. 500mA
Input signal:	0-10V
Output:	0-10V
Entrance isolation	1kV
Position accuracy:	0.25% typical
Ramp-up time:	10 seconds to 120 seconds
Minimum Setting:	0% to 25%
Maximum setting:	52% to 100%



Connection diagram:



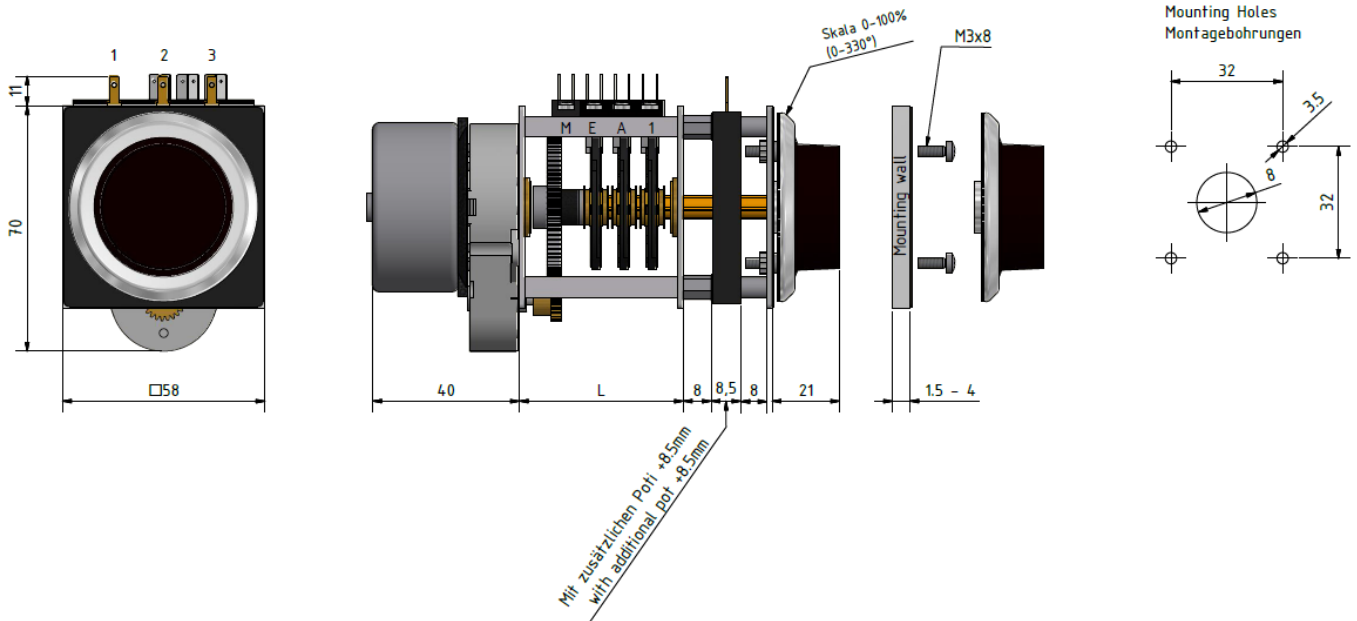
1-Turn Motorpotentiometer front mounting

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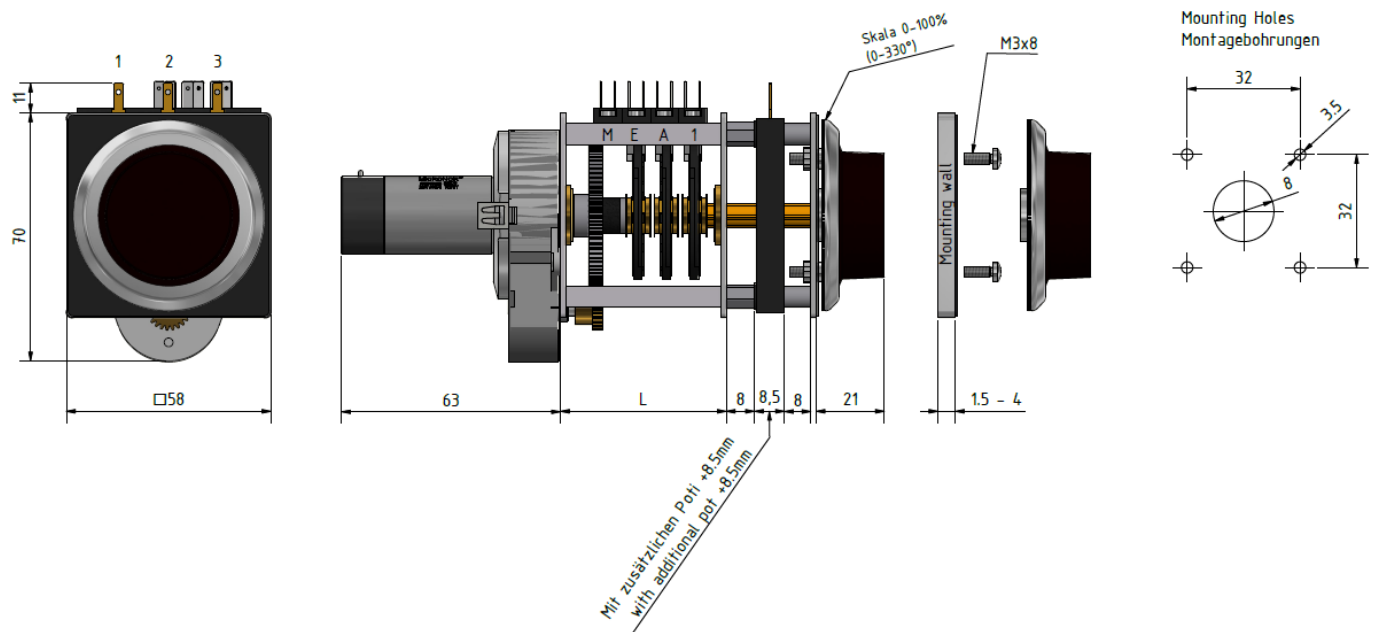
Dimension in mm



AC Motor



DC Motor



1-Turn Motorpotentiometer front mounting

MPF SERIE



903 x. x x. x x x

SIZE	
1	Size 1 - 0 switches
2	Size 2 - 2 switches (KS25B4), 39mm length, end switches adjustable (NK4101/20°), 0 user contact free programmable (NK4201), no program key (PSN) not necessary
3	Size 3 - 3 switches (KS25B4), 47mm length, 2 end switches adjustable (NK4101/20°), 1 user contact free programmable (NK4201), 1 program key (PSN)
4	Size 4 - 4 switches (KS25B4), 55mm length, 2 end switches adjustable (NK4101/20°), 2 user contact free programmable (NK4201), 1 program key (PSN)
5	Size 5 - 5 switches (KS25B4), 63mm length, 2 end switches adjustable (NK4101/20°), 3 user contact free programmable (NK4201), 1 program key (PSN)
6	Size 6 - 6 switches (KS25B4), 71mm length, 2 end switches adjustable (NK4101/20°), 4 user contact free programmable (NK4201), 1 program key (PSN)
CYCLE TIME	
1	10 sec
2	15 sec
3	20 sec
4	30 sec
5	45 sec
6	60 sec
7	75 sec
8	90 sec
9	120 sec
MOTOR POWER (AC/DC) 50Hz	
1	C-Motor AC 24V CW
2	C-Motor AC 48V CW / CCW
3	C-Motor AC 110V CW / CCW
4	C-Motor AC 220V CW / CCW
5	G1-Motor DC 24V (+- 0.1) CW / CCW
6	G2-Motor DC 12V (+- 0.1) CW / CCW
	60Hz Frequency on request
RESISTANCE POTENTIOMETER 1 DPC	
0	none
1	500Ohm
2	1kOhm
3	2kOhm
4	5kOhm
5	10kOhm
6	2.5kOhm
7	20kOhm
8	100kOhm
RESISTANCE POTENTIOMETER 2 DPC	
0	none
1	500Ohm
2	1kOhm
3	2kOhm
4	5kOhm
5	10kOhm
6	2.5kOhm
7	20kOhm
8	100kOhm
STOP AND CONTROL UNIT FOR DC-MOTORS	
0	None
1	PRSG.2 Control unit Stop and Switch E and A
2	PSG.2 stopper unit for DC Motors - two switches
3	PRSG.3 Control unit Stop and Switch E and A + 1
4	PSG.3 stopper unit for DC Motors - three switches
5	MR265 4-20mA Sensor output 2 wire
6	MR265 4-20mA Current interface 4 wire, GND Power and two Sensor
7	MR267 4-20mA Current interface input module isolated
8	MR267 0-10V Voltage Interface input module isolated

1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

Serie MPR - MPP- MPF

Order key

MPP41
MPR41
MPF41

02 1 G1 1 0 0

incl. 1 Potentiometer, each further costs additionally in accordance with price list accessories
max. 3 Potentiometer

Size / Dimension (mm) / Number of switches:

2 -->Size 39 mm -->Dimension (L)	02 = 2 Switches 2 Adjustable limit switches (NK4101/20%) + 0 Program channels free setting (NK4201)
3 -->Size 47 mm -->Dimension (L)	03 = 3 Switches 2 Adjustable limit switches (NK4101/20%) + 1 Program channels free setting (NK4201) 1 Program key (PSN)
6 -->Size 71 mm -->Dimension (L)	06 = 6 Switches 2 Adjustable limit switches (NK4101/20%) + 4 Program channels free setting (NK4201) 1 Program key (PSN)

Cycle times (sec.):

1 = 10s 2 = 15s 3 = 20s 4 = 30s 5 = 45s
6 = 60s 7 = 75s 8 = 90s 9 = 120s 10 = 180s

Synchronous motor: Power supply (AC / DC) Frequency 50Hz (60Hz)

	CW	CCW	
C1 = 24	/ 24V		AC
C2 = 48	/ 48...	50V	AC
C3 = 110	/ 110...	120V	AC C3 Motor no longer available, Recommend G1 or G2.
C4 = 220	/ 220...	240V	AC
G1 = 24	/ 24V	± 0.1	DC
G2 = 12	/ 12V	± 0.1	DC

Wire-wound potentiometer: Resistance R1

1 = 100Ω 2 = 200Ω 3 = 500Ω 4 = 1KΩ 5 = 2KΩ
6 = 5KΩ 7 = 10KΩ 8 = 2.5KΩ 9 = 20KΩ 10 = 100KΩ

Wire-wound potentiometer: Resistance R2 (0 = None)

1 = 100Ω 2 = 200Ω 3 = 500Ω 4 = 1KΩ 5 = 2KΩ
6 = 5KΩ 7 = 10KΩ 8 = 2.5KΩ 9 = 20KΩ 10 = 100KΩ

Controller Option

0 = -
1 = PRSG.2
2 = PSG.2
3 = PRSG.3
4 = PSG.3

Example: MPP4102-1-G1-1-0-0

MPP series, A/E (Start/Stop) Limit Switches, T=10s, R1=100 Ohms, No R2, No Controller