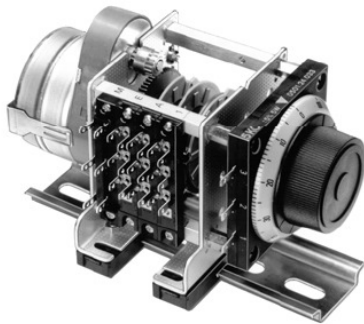


# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPP

DIN Rail Side Mount



- |                                                                                |                                |
|--------------------------------------------------------------------------------|--------------------------------|
| • <b>Feindrahtpotentiometer</b><br>Wire-wound potentiometer                    | <b>R1...R5 (5W)</b>            |
| • <b>Widerstandswerte</b><br>Resistance                                        | <b>100R...100K (Ω)</b>         |
| • <b>Endlagenkontakte einstellbar</b><br>Adjustable limit switches             | <b>2</b>                       |
| • <b>Nutzkontakte</b> (frei programmierbar)<br>Program channels (free setting) | <b>1...7</b>                   |
| • <b>Schnellbefestigung</b><br>Quick rail mounting                             | <b>35 DIN 46277 / EN 50022</b> |

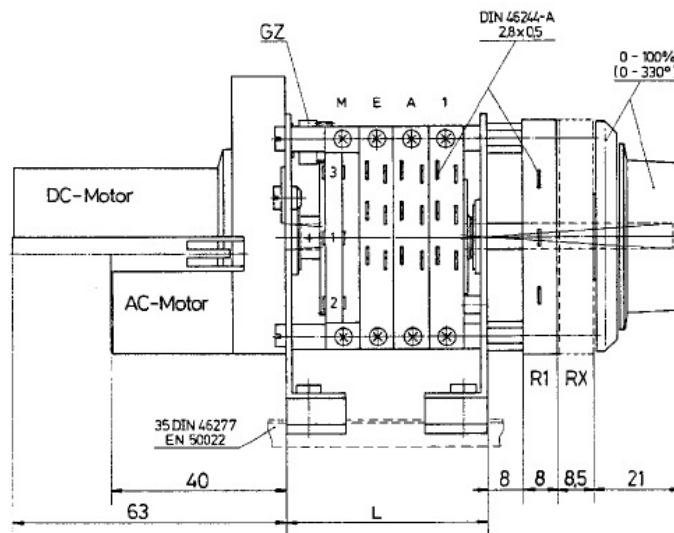
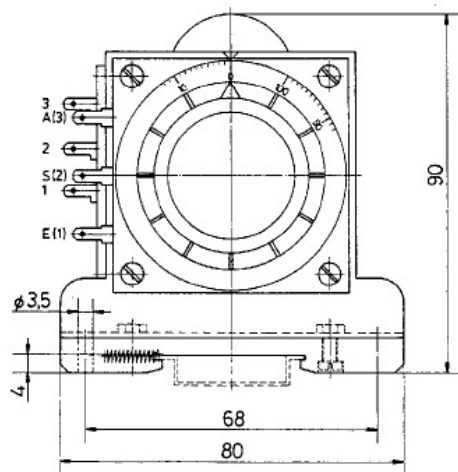
### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
- Supplementary cams can also be used to offset a residual resistance of the potentiometer at the zero point
- One supplementary cam can be used as zero point interlocking

### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

### Outline drawing



Technische Änderungen vorbehalten / Subject to change without prior notice

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPP

### Order key

MPP41 00 1 C1 1 1

Each further potentiometer costs additionally in accordance with price list accessories  
max. 3 Potentiometer

#### Size / Dimension (mm) / Number of switches:

|    |                                                                                     |
|----|-------------------------------------------------------------------------------------|
| 1  | -->Size                                                                             |
| 01 | = 0 Switches                                                                        |
| 2  | -->Size                                                                             |
| 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)                                                                 |
| 9  | -->Size                                                                             |
|    | 95 mm -->Dimension (L)                                                              |
| 09 | = 9 Switches                                                                        |
|    | 2 Adjustable limit switches (NK4101/20%) + 7 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  |
| C4 | = 220 | /  | 220... | 240V AC  |
| G1 | = 24  | /  | 24V    | ± 0.1 DC |
| G2 | = 12  | /  | 12V    | ± 0.1 DC |

On request

#### Wire-wound potentiometer: Resistance (x 1)

|   |        |   |        |   |        |   |       |
|---|--------|---|--------|---|--------|---|-------|
| 1 | = 100Ω | 2 | = 200Ω | 3 | = 500Ω | 4 | = 1KΩ |
| 5 | = 2KΩ  | 6 | = 5KΩ  | 7 | = 10KΩ |   |       |

#### Wire-wound potentiometer: Resistance

|    |         |
|----|---------|
| 8  | = 2.5KΩ |
| 9  | = 20KΩ  |
| 10 | = 100KΩ |

Ex.: MPP4103-2-C3-1-10102

meant for the potentiometer choice:  
R1=100KΩ, R2=100KΩ, R3=200Ω

Special products will be produced under a new article number.

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPF

Front Panel Mount



- |                                                                                |                                          |
|--------------------------------------------------------------------------------|------------------------------------------|
| • <b>Feindrahtpotentiometer</b><br>Wire-wound potentiometer                    | <b>R1...R2 (5W)</b>                      |
| • <b>Widerstandswerte</b><br>Resistance                                        | <b>100R...100K (<math>\Omega</math>)</b> |
| • <b>Endlagenkontakte einstellbar</b><br>Adjustable limit switches             | <b>2</b>                                 |
| • <b>Nutzkontakte</b> (frei programmierbar)<br>Program channels (free setting) | <b>1...4</b>                             |
| • <b>Türeinbau</b><br>Panel mount                                              |                                          |

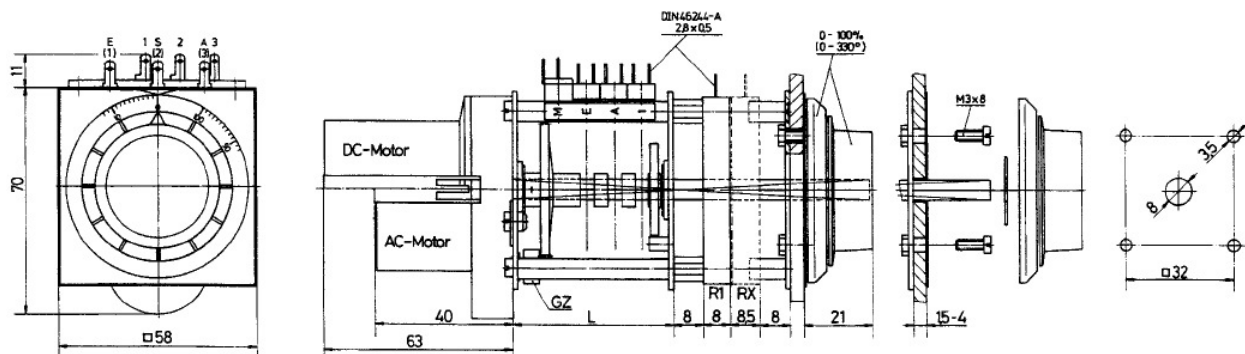
### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
- Supplementary cams can also be used to offset a residual resistance of the potentiometer at the zero point
- One supplementary cam can be used as zero point interlocking

### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

### Outline drawing



Technische Änderungen vorbehalten / Subject to change without prior notice

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPF

### Order key

MPF41

00

1

C1

1

1

1

Each further potentiometer costs additionally in accordance with price list accessories  
max. 3 Potentiometer

Size / Dimension (mm) / Number of switches:

|                                                                                     |              |
|-------------------------------------------------------------------------------------|--------------|
| 1 -->Size                                                                           |              |
| 01                                                                                  | = 0 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 |   |       |

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    |
| C4 | = 220 | /  | 220... | 240V AC    |
| G1 | = 24  | /  | 24V    | ± 0.1 DC   |
| G2 | = 12  | /  | 12V    | ± 0.1 DC   |
|    |       |    |        | On request |

Wire-wound potentiometer: Resistance

|   |        |   |        |   |        |   |       |   |       |
|---|--------|---|--------|---|--------|---|-------|---|-------|
| 1 | = 100Ω | 2 | = 200Ω | 3 | = 500Ω | 4 | = 1KΩ | 5 | = 2KΩ |
| 6 | = 5KΩ  | 7 | = 10KΩ |   |        |   |       |   |       |

Wire-wound potentiometer: Resistance

|   |         |   |        |    |         |
|---|---------|---|--------|----|---------|
| 8 | = 2.5KΩ | 9 | = 20KΩ | 10 | = 100KΩ |
|---|---------|---|--------|----|---------|

Wire-wound potentiometer: Resistance

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

Ex.: MPF4106-1-C2-598-0

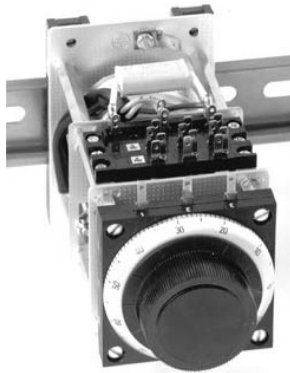
meant for the potentiometer choice:  
R1=2KΩ, R2=20KΩ, R3=2.5KΩ

Special products will be produced under a new article number.

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPR

DIN Rail End Mount



- |                                                                                |                                |
|--------------------------------------------------------------------------------|--------------------------------|
| • <b>Feindrahtpotentiometer</b><br>Wire-wound potentiometer                    | <b>R1...R2 (5W)</b>            |
| • <b>Widerstandswerte</b><br>Resistance                                        | <b>100R...100K (Ω)</b>         |
| • <b>Endlagenkontakte einstellbar</b><br>Adjustable limit switches             | <b>2</b>                       |
| • <b>Nutzkontakte</b> (frei programmierbar)<br>Program channels (free setting) | <b>1...4</b>                   |
| • <b>Rückwand- Schnellbefestigung</b><br>Quick rail base mounting              | <b>35 DIN 46277 / EN 50022</b> |

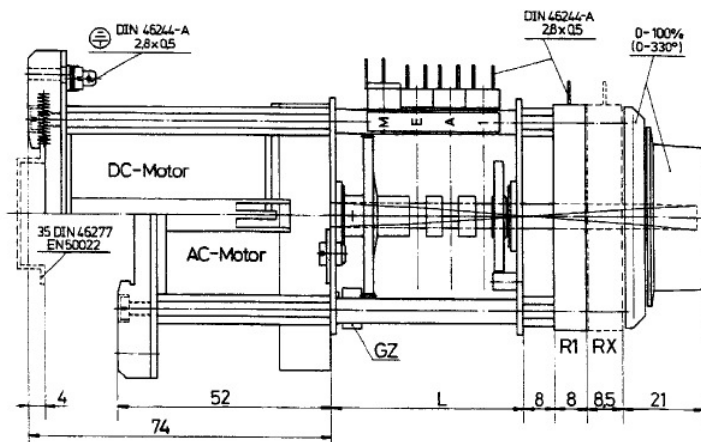
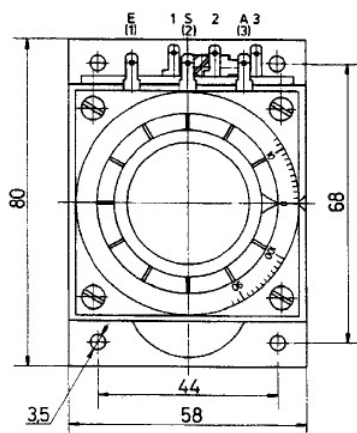
### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
- Supplementary cams can also be used to offset a residual resistance of the potentiometer at the zero point
- One supplementary cam can be used as zero point interlocking

### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

### Outline drawing



Technische Änderungen vorbehalten / Subject to change without prior notice

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPR

### Order key

MPR41

00

1

C1

1

1

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 |
| C4 | = 220 | /  | 220... 240V | AC |
| G1 | = 24  | /  | 24V ± 0.1   | DC |
| G2 | = 12  | /  | 12V ± 0.1   | DC |

On request

#### Wire-wound potentiometer: Resistance

|   |        |   |        |   |        |   |       |   |       |
|---|--------|---|--------|---|--------|---|-------|---|-------|
| 1 | = 100Ω | 2 | = 200Ω | 3 | = 500Ω | 4 | = 1KΩ | 5 | = 2KΩ |
| 6 | = 5KΩ  | 7 | = 10KΩ |   |        |   |       |   |       |

#### Wire-wound potentiometer: Resistance

|   |         |   |        |    |         |
|---|---------|---|--------|----|---------|
| 8 | = 2.5KΩ | 9 | = 20KΩ | 10 | = 100KΩ |
|---|---------|---|--------|----|---------|

#### Wire-wound potentiometer: Resistance

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

Ex.: MPR4102-3-C2-119-0

meant for the potentiometer choice:  
R1=100Ω, R2=100Ω, R3=20KΩ

Special products will be produced under a new article number.

# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VAC

DIN Rail Mount, Protective Housing, AC Operation



- |                                                                          |                                            |
|--------------------------------------------------------------------------|--------------------------------------------|
| • <b>Feindrahtpotentiometer</b><br>Wire-wound potentiometer              | Typ DPC                                    |
| • <b>Widerstandwert</b><br>Resistance                                    | 100 R ... 100 K (5 W)                      |
| • Endlagenkontakte einstellbar<br>Adjustable limit switches              | 2 + 3                                      |
| • Nutzkontakte frei programierbar<br>Program channels free setting       | 1 + 2                                      |
| • <b>Synchronmotor</b> (CW / CCW)<br>Synchronous motor (CW / CCW)        | 24 V ; 48 V ; 110 V ; 220 VAC (50 / 60 Hz) |
| • <b>DIN-Schnellbefestigungsklammer</b><br>DIN Quick rail mounting clamp | 35 DIN 46277 / EN 50022                    |

### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
- Supplementary cams can also be used to offset a residual resistance of the potentiometer at the zero point
- One supplementary cam can be used as zero point interlocking

### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VAC

### Technical data

#### Wire-wound potentiometer

Resistance  
Resistance tolerance  
Linearity  
Power rating  
Slider current  
Dielectric strength  
Rotation angle (mech. / electr.)

#### Typ DPC ( 5W )

100 R ... 100 K  
± 5%  
< 0.15%  
5W (40°C)  
100mA  
900 VDC  
330°

#### Adjustable single cam

Programming possibilities  
Number of pulses per revolution  
With cam profile valley 20° (connection)  
With cam profile peak (connection)

#### 2x NK4101.20°

1  
COM / NC  
COM / NO

#### Adjustable double cam

Programming possibilities  
Number of pulses per revolution  
With cam profile valley 4 ... 180° ≈ 1 ... 50 %  
With cam profile peak 4 ... 356° ≈ 1 ... 99 %

#### 1x NK4201.180°

1  
COM / NC  
COM / NO

#### Precision snap action switch

Double solder and plug socket connection

Common contact  
Actuating contact normally open  
Rest contact, normally closed

COM (1)  
NC (2)  
NO (3)

#### Snap action switch

Switching power  
Contact material (Contact resistance)

**KS 25 B4**  
4A 250VAC / 1A 60 VDC  
Ag 999 (< 25 mΩ)

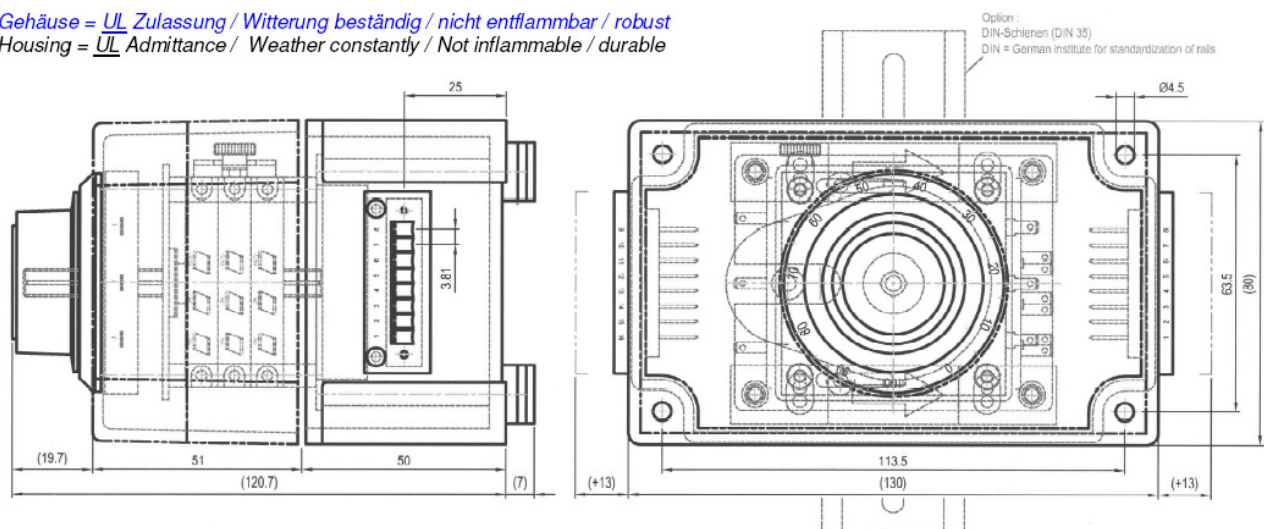
#### Snap action switch

Contact material (Contact resistance)

**KS 26 B4**  
Au 4 ... 6 μm (< 10mΩ)

### Outline drawing

Gehäuse = UL Zulassung / Witterung beständig / nicht entflammbar / robust  
Housing = UL Admittance / Weather constantly / Not inflammable / durable



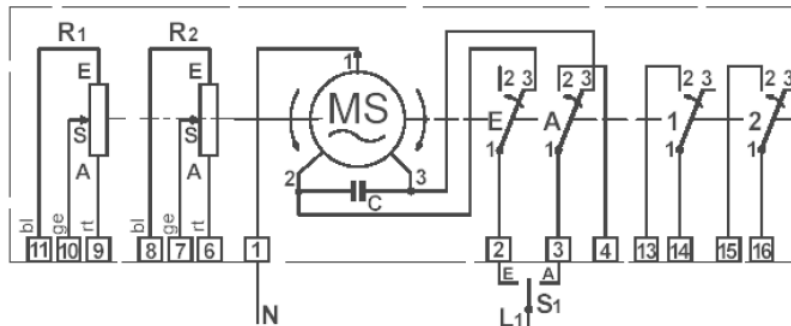
Technische Änderungen vorbehalten / Subject to change without prior notice

# 1 Turn motorized potentiometer protective housing

## 1 Gang Motorpotentiometer Schutzgehäuse

Serie MPC VAC

### Electrical connection



#### Zulassung:

Überspannungskategorie II: Anschluss an eine **feste elektrische Installation innerhalb eines Gehäuses oder Gebäudes ist erlaubt**  
Isolierstoffgruppe III des Steckers unter Verschmutzungsgrad 3:  
Es tritt leitfähige Verschmutzung auf oder trockene, nichtleitfähige Verschmutzung, aber keine beständige Leitfähigkeit  
Empfehlung: Die Drähte des Steckers in uneingestecktem Zustand anschrauben.

#### Admittance:

Over voltage category II: Connection with a firm (fixed) **electric installation within a casing or building is allowed**  
Insulant group III of the plug under pollution level 3  
There appears conductive pollution or dry, non-conductive pollution, but no constant conductivity  
Recommendation: screw the wires with the plug unplugged

lose mit geliefert / Loose with supplied

2x Steckverbinder mit Schraubklemme / 2x Plug connector with screw wedges

# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VAC

### Order key

MPC41 2.1 1 C1 1 1 1 1

#### VAC-Motor

Size / Dimension (mm) / Number of switches:

|                                                                                           |  |
|-------------------------------------------------------------------------------------------|--|
| 2 -->Size                                                                                 |  |
| 3 Switches                                                                                |  |
| 2.1 = 2 Adjustable limit switches (NK4101/20°) + 1 Program channels free setting (NK4201) |  |
| 1 Program key (PSN)                                                                       |  |
| Knob inside; PC125                                                                        |  |
| C Motor!                                                                                  |  |
| 2 -->Size                                                                                 |  |
| 3 Switches                                                                                |  |
| 2.2 = 2 Adjustable limit switches (NK4101/20°) + 1 Program channels free setting (NK4201) |  |
| 1 Program key (PSN)                                                                       |  |
| Knob outside; PC100                                                                       |  |
| C Motor!                                                                                  |  |
| 3 -->Size                                                                                 |  |
| 4 Switches                                                                                |  |
| 3.1 = 2 Adjustable limit switches (NK4101/20°) + 2 Program channels free setting (NK4201) |  |
| 1 Program key (PSN)                                                                       |  |
| Knob outside; PC100                                                                       |  |
| C Motor!                                                                                  |  |
| 4 -->Size                                                                                 |  |

Micronor Inc. Newbury Park, CA USA ☎ +1-805-499-0114 📠 +1-805-499-6585 ✉ sales@micronor.com 🌐 www.micronor.com

1 Program key (PSN)  
Knob outside; PC125 (for 2 Potentiometer)  
C Motor!

#### Cycle times (sec.):

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

#### 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 |
| C4 = 220 | / | 220... | 240V | AC |

#### Wire-wound potentiometer (Size 2.1, 2.2, 3.1, 3.2): Resistance

|          |          |          |         |         |
|----------|----------|----------|---------|---------|
| 1 = 100Ω | 2 = 200Ω | 3 = 500Ω | 4 = 1KΩ | 5 = 2KΩ |
| 6 = 5KΩ  | 7 = 10KΩ |          |         |         |

#### Wire-wound potentiometer (Size 2.1, 2.2, 3.1, 3.2): Resistance

|           |          |            |
|-----------|----------|------------|
| 8 = 2.5KΩ | 9 = 20KΩ | 10 = 100KΩ |
|-----------|----------|------------|

#### Wire-wound potentiometer (Size 3.2): Resistance

|          |          |          |         |         |
|----------|----------|----------|---------|---------|
| 1 = 100Ω | 2 = 200Ω | 3 = 500Ω | 4 = 1KΩ | 5 = 2KΩ |
| 6 = 5KΩ  | 7 = 10KΩ |          |         |         |

#### Wire-wound potentiometer (Size 3.2): Resistance

|           |          |            |
|-----------|----------|------------|
| 8 = 2.5KΩ | 9 = 20KΩ | 10 = 100KΩ |
|-----------|----------|------------|

Special products will be produced under a new article number.

Technische Änderungen vorbehalten / Subject to change without prior notice

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# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VDC

DIN Rail Mount, Protective Housing, DC Operation



|                                  |                        |
|----------------------------------|------------------------|
| Feindrahtpotentiometer           | Typ DPC                |
| Wire-wound potentiometer         |                        |
| Widerstandwert                   | 100R ... 100K (5W)     |
| Resistance                       |                        |
| Endlagenkontakte einstellbar     | 2 + 3                  |
| Adjustable limit switches        |                        |
| Nutzkontakte frei programmierbar | 1 + 2                  |
| Program channels free setting    |                        |
| Synchromotor (CW / CCW)          | 12V; 24V DC            |
| Synchronous motor (CW / CCW)     |                        |
| DIN-Schnellbefestigungsklammer   | 35DIN 46277 / EN 50022 |
| DIN Quick rail mounting clamp    |                        |

### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
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### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
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- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
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# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VDC

### Technical data

#### Wire-wound potentiometer

Resistance  
Resistance tolerance  
Linearity  
Power rating  
Slider current  
Dielectric strength  
Rotation angle (mech. / electr.)

#### Typ DPC ( 5W )

100 R ... 100 K  
± 5%  
< 0.15%  
5W (40°C)  
100mA  
900 VDC  
330°

#### Adjustable single cam

Programming possibilities  
Number of pulses per revolution  
With cam profile valley 20° (connection)  
With cam profile peak (connection)

#### 2x NK4101.20°

1  
COM / NC  
COM / NO

#### Adjustable double cam

Programming possibilities  
Number of pulses per revolution  
With cam profile valley 4 ... 180° ≈ 1 ... 50 %  
With cam profile peak 4 ... 356° ≈ 1 ... 99 %

#### 1x NK4201.180°

1  
COM / NC  
COM / NO

#### Precision snap action switch

Double solder and plug socket connection

Common contact  
Actuating contact normally open  
Rest contact, normally closed

COM (1)  
NC (2)  
NO (3)

#### Snap action switch

Switching power  
Contact material (Contact resistance)

**KS 25 B4**  
4A 250VAC / 1A 60 VDC  
Ag 999 (< 25 mΩ)

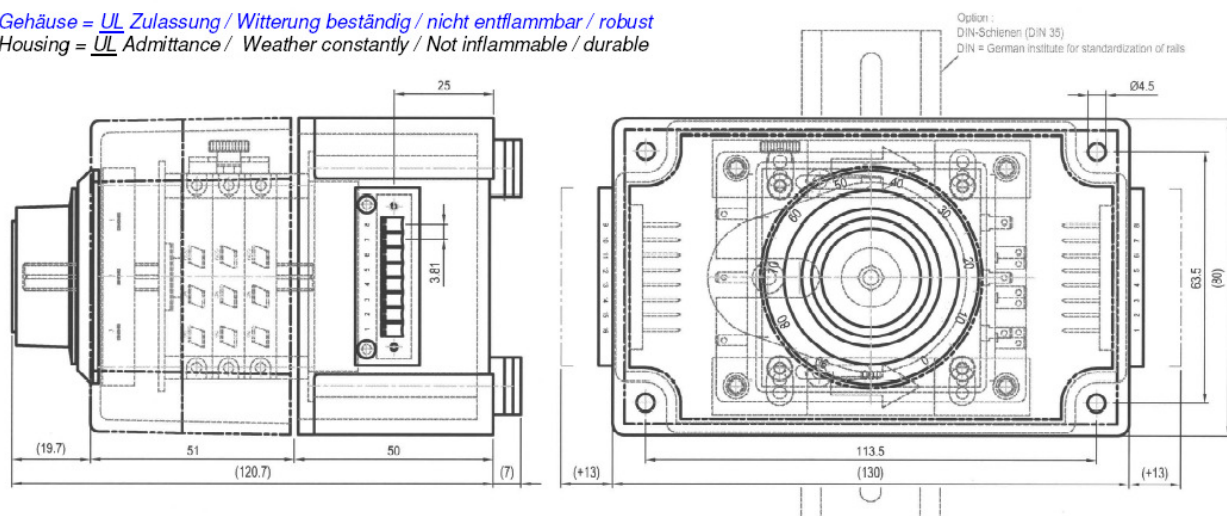
#### Snap action switch

Contact material (Contact resistance)

**KS 26 B4**  
Au 4 ... 6 μm (< 10mΩ)

### Outline drawing

Gehäuse = UL Zulassung / Witterung beständig / nicht entflammbar / robust  
Housing = UL Admittance / Weather constantly / Not inflammable / durable

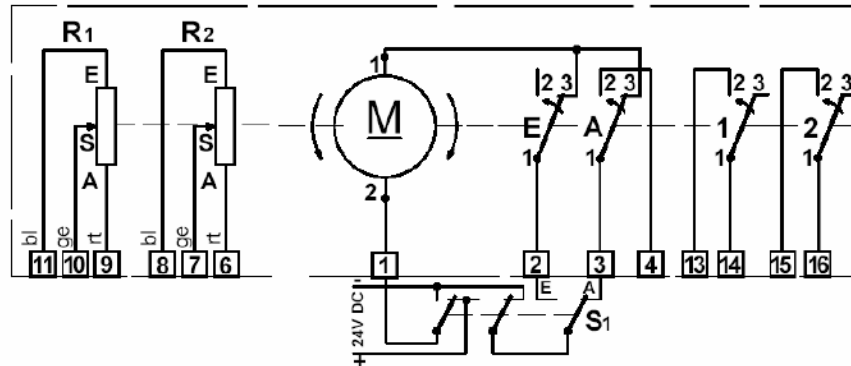


Technische Änderungen vorbehalten / Subject to change without prior notice

# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VDC

### Electrical connection



#### Zulassung:

Überspannungskategorie II: Anschluss an eine **feste elektrische Installation innerhalb eines Gehäuses oder Gebäudes ist erlaubt**

Isolierstoffgruppe III des Steckers unter Verschmutzungsgrad 3:

Es tritt leitfähige Verschmutzung auf oder trockene, nichtleitfähige Verschmutzung, aber keine beständige Leitfähigkeit

Empfehlung: Die Drähte des Steckers in uneingestecktem Zustand anschrauben.

#### Admittance:

Over voltage category II: Connection with a firm (fixed) **electric installation within a casing or building is allowed**

Insulant group III of the plug under pollution level 3

There appears conductive pollution or dry, non-conductive pollution, but no constant conductivity

Recommendation: screw the wires with the plug unplugged

# 1 Turn motorized potentiometer protective housing 1 Gang Motorpotentiometer Schutzgehäuse

## Serie MPC VDC

### Order key

MPC41

2

1

G1

1

1

#### VDC-Motor

Size / Dimension (mm) / Number of switches:

|     |                                                                                                                                                |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------|
| 2   | -->Size<br>2 Switches                                                                                                                          |
| 2   | = 2 Adjustable limit switches (NK4101/20°) + 0 Program channels free setting (NK4201)<br>Knob inside; PC125<br>G Motor!                        |
| 3.1 | -->Size<br>3 Switches                                                                                                                          |
| 3.1 | = 2 Adjustable limit switches (NK4101/20°) + 1 Program channels free setting (NK4201)<br>1 Program key (PSN)<br>Knob inside; PC125<br>G Motor! |
| 3.2 | -->Size<br>4 Switches                                                                                                                          |
| 3.2 | = 2 Adjustable limit switches (NK4101/20°) + 2 Program channels free setting (NK4201)<br>1 Program key (PSN)<br>Knob inside; PC125<br>G Motor! |

#### Cycle times (sec.):

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

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

|    |      |    |     |          |
|----|------|----|-----|----------|
|    |      | CW | CCW |          |
| G1 | = 24 | /  | 24V | ± 0.1 DC |
| G2 | = 12 | /  | 12V | ± 0.1 DC |

Wire-wound potentiometer: Resistance

|   |        |   |        |   |        |   |       |   |       |
|---|--------|---|--------|---|--------|---|-------|---|-------|
| 1 | = 100Ω | 2 | = 200Ω | 3 | = 500Ω | 4 | = 1KΩ | 5 | = 2KΩ |
| 6 | = 5KΩ  | 7 | = 10KΩ |   |        |   |       |   |       |

Wire-wound potentiometer: Resistance

|   |         |   |        |    |         |
|---|---------|---|--------|----|---------|
| 8 | = 2.5KΩ | 9 | = 20KΩ | 10 | = 100KΩ |
|---|---------|---|--------|----|---------|

Special products will be produced under a new article number.

# 1 Turn-Potentiometer drive 1 Gang-Potentiometerantrieb

## Serie MP



- **Zum Anbau von Potentiometer**  
To mount external potentiometer
- **Anzahl Potentiometer** 1...3  
Number of Potentiometer
- **Widerstandswerte** 100R...10K (Ω)  
Resistance
- **Endlagenkontakte einstellbar** 2  
Adjustable limit switches
- **Nutzkontakte** (frei programierbar) 1...7  
Program channels free setting
- **Schnellbefestigung** 35 DIN 46277 / EN 50022  
Quick rail mounting

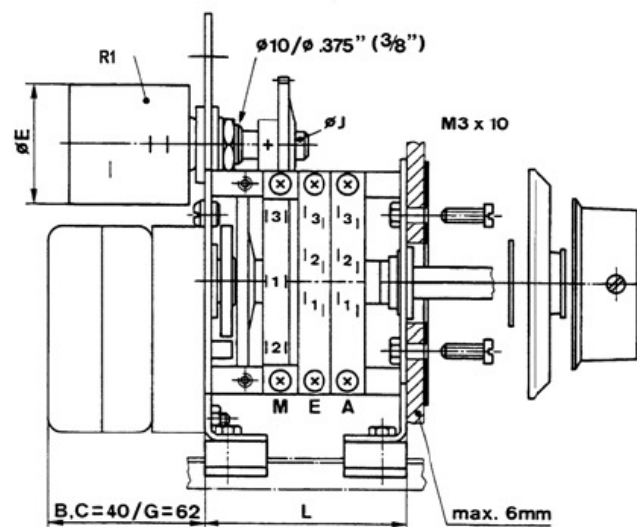
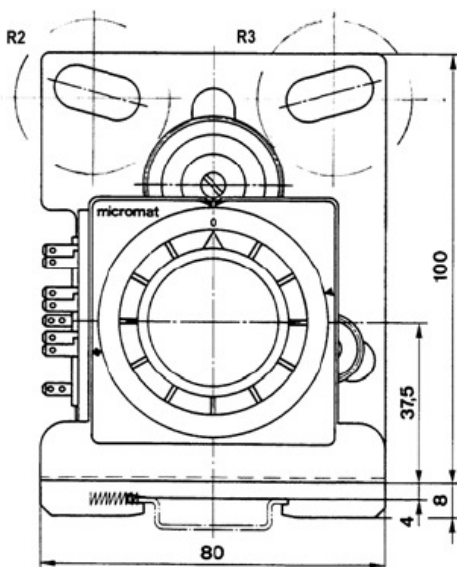
### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
- Supplementary cams can also be used to offset a residual resistance of the potentiometer at the zero point
- One supplementary cam can be used as zero point interlocking

### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

### Outline drawing



# 1 Turn-Potentiometer drive 1 Gang-Potentiometerantrieb

## Serie MP

### Order key

MP41 02 1 C1 1 0

max. 3 Potentiometer

#### Size / Dimension (mm) / Number of switches:

|           |                                                                                                                            |
|-----------|----------------------------------------------------------------------------------------------------------------------------|
| 2 -->Size |                                                                                                                            |
| 02        | = 2 Switches<br>2 Adjustable limit switches (NK4101/20°) + 0 Program channels free setting (NK4201)                        |
| 3 -->Size |                                                                                                                            |
| 03        | = 3 Switches<br>2 Adjustable limit switches (NK4101/20°) + 1 Program channels free setting (NK4201)<br>1 Program key (PSN) |
| 6 -->Size |                                                                                                                            |
| 06        | = 6 Switches<br>2 Adjustable limit switches (NK4101/20°) + 4 Program channels free setting (NK4201)<br>1 Program key (PSN) |
| 9 -->Size |                                                                                                                            |
| 09        | = 9 Switches<br>2 Adjustable limit switches (NK4101/20°) + 7 Program channels free setting (NK4201)<br>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    |
| C4 | = 220 | /  | 220... | 240V AC    |
| G1 | = 24  | /  | 24V    | ± 0.1 DC   |
| G2 | = 12  | /  | 12V    | ± 0.1 DC   |
|    |       |    |        | On request |

#### Wire-wound potentiometer: Type

|   |          |      |
|---|----------|------|
| 1 | = DP1    | 2W   |
| 2 | = DPM20  | 20W  |
| 3 | = DPM60  | 60W  |
| 4 | = DPM170 | 170W |

#### Wire-wound potentiometer: Resistance

|   |       |   |       |   |       |    |        |    |        |    |        |   |        |
|---|-------|---|-------|---|-------|----|--------|----|--------|----|--------|---|--------|
| 0 | = -   | 1 | = 10Ω | 2 | = 20Ω | 3  | = 50Ω  | 4  | = 100Ω | 5  | = 200Ω | 6 | = 500Ω |
| 7 | = 1KΩ | 8 | = 2KΩ | 9 | = 5KΩ | 10 | = 10KΩ | 11 | = 20KΩ | 12 | = 50KΩ |   |        |

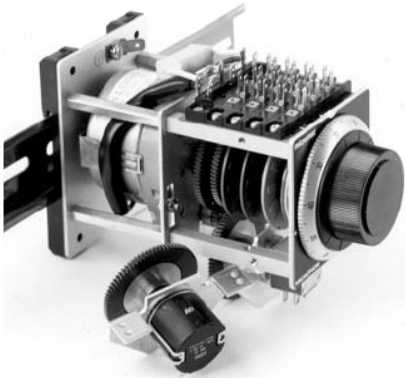
Ex.: MP4103-6-C3-1-81112

meant for the potentiometer choice:  
R1=2KΩ, R2=20KΩ, R3=50KΩ

Special products will be produced under a new article number.

# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPRE



|                                                                                |                                |
|--------------------------------------------------------------------------------|--------------------------------|
| • <b>Feindrahtpotentiometer</b><br>Wire-wound potentiometer                    | <b>R1...R3 (2W)</b>            |
| • <b>Widerstandswerte</b><br>Resistance                                        | <b>10R...50K (Ω)</b>           |
| • <b>Endlagenkontakte einstellbar</b><br>Adjustable limit switches             | <b>2</b>                       |
| • <b>Nutzkontakte</b> (frei programmierbar)<br>Program channels (free setting) | <b>1...4</b>                   |
| • <b>Rückwand- Schnellbefestigung</b><br>Quick rail base mounting              | <b>35 DIN 46277 / EN 50022</b> |

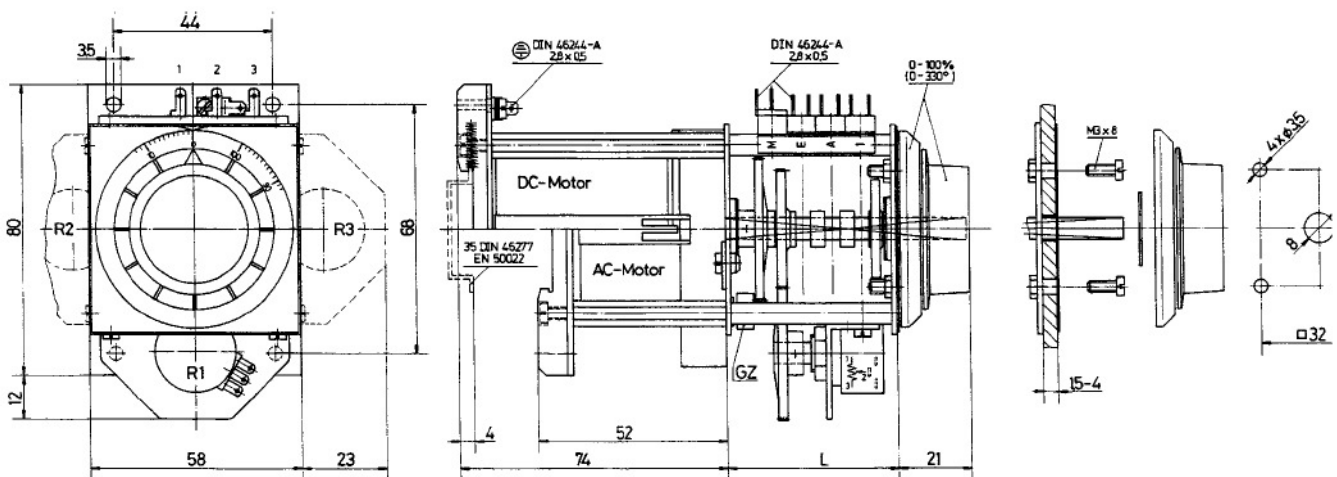
### Application:

- Motorized potentiometers are basically the best in the field of control and regulation technics
- The possibility to mount several potentiometers on the same shaft allows also a remote display of the position of the potentiometer
- Supplementary cams can be used to give limit signals depending on the position of the potentiometer
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### Design:

- High precision wire-wound potentiometer with high resolution and linearity
- Potentiometer directly driven by the cam shaft
- Two adjustable limit switches controlling the rotation angle of the potentiometer
- Solid mechanical Stopps preventing damage to potentiometers
- Available with AC or DC motors
- Friction clutch protecting the unit when manually operated
- The modular design allows quick delivery practically without delay, voltage resistance and cycle time according to your requirements

### Outline drawing



# 1 Turn-Motorized potentiometer 1 Gang-Motorpotentiometer

## Serie MPRE

### Order key

MPRE41 02 1 C1 1 1 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 |                                                                                                                                                        |
| 02        | = 55 mm -->Dimension (L)<br>2 Switches<br>2 Adjustable limit switches (NK4101/20°) + 0 Program channels free setting (NK4201)                          |
| 3 -->Size |                                                                                                                                                        |
| 03        | = 63 mm -->Dimension (L)<br>3 Switches<br>2 Adjustable limit switches (NK4101/20°) + 1 Program channels free setting (NK4201)<br>1 Program key (PSN)   |
| 6 -->Size |                                                                                                                                                        |
| 06        | = 71 mm -->Dimension (L)<br>6 Switches<br>2 Adjustable limit switches (NK4101/20°) + 4 Program channels free setting (NK4201)<br>1 Programierkey (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  |
| C4         | = 220 | /  | 220... | 240V AC  |
| G1         | = 24  | /  | 24V    | ± 0.1 DC |
| G2         | = 12  | /  | 12V    | ± 0.1 DC |
| On request |       |    |        |          |

Wire-wound potentiometer: Resistance (DP1 2W / DP2 2W)

|   |        |   |        |   |        |   |       |   |       |
|---|--------|---|--------|---|--------|---|-------|---|-------|
| 1 | = 100Ω | 2 | = 200Ω | 3 | = 500Ω | 4 | = 1KΩ | 5 | = 2KΩ |
| 6 | = 5KΩ  | 7 | = 10KΩ |   |        |   |       |   |       |

Wire-wound potentiometer: Resistance (DP1 2W / DP2 2W)

|   |         |   |        |    |         |
|---|---------|---|--------|----|---------|
| 8 | = 2.5KΩ | 9 | = 20KΩ | 10 | = 100KΩ |
|---|---------|---|--------|----|---------|

Wire-wound potentiometer: Resistance

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

Ex.: MPRE4103-4-C1-769-0

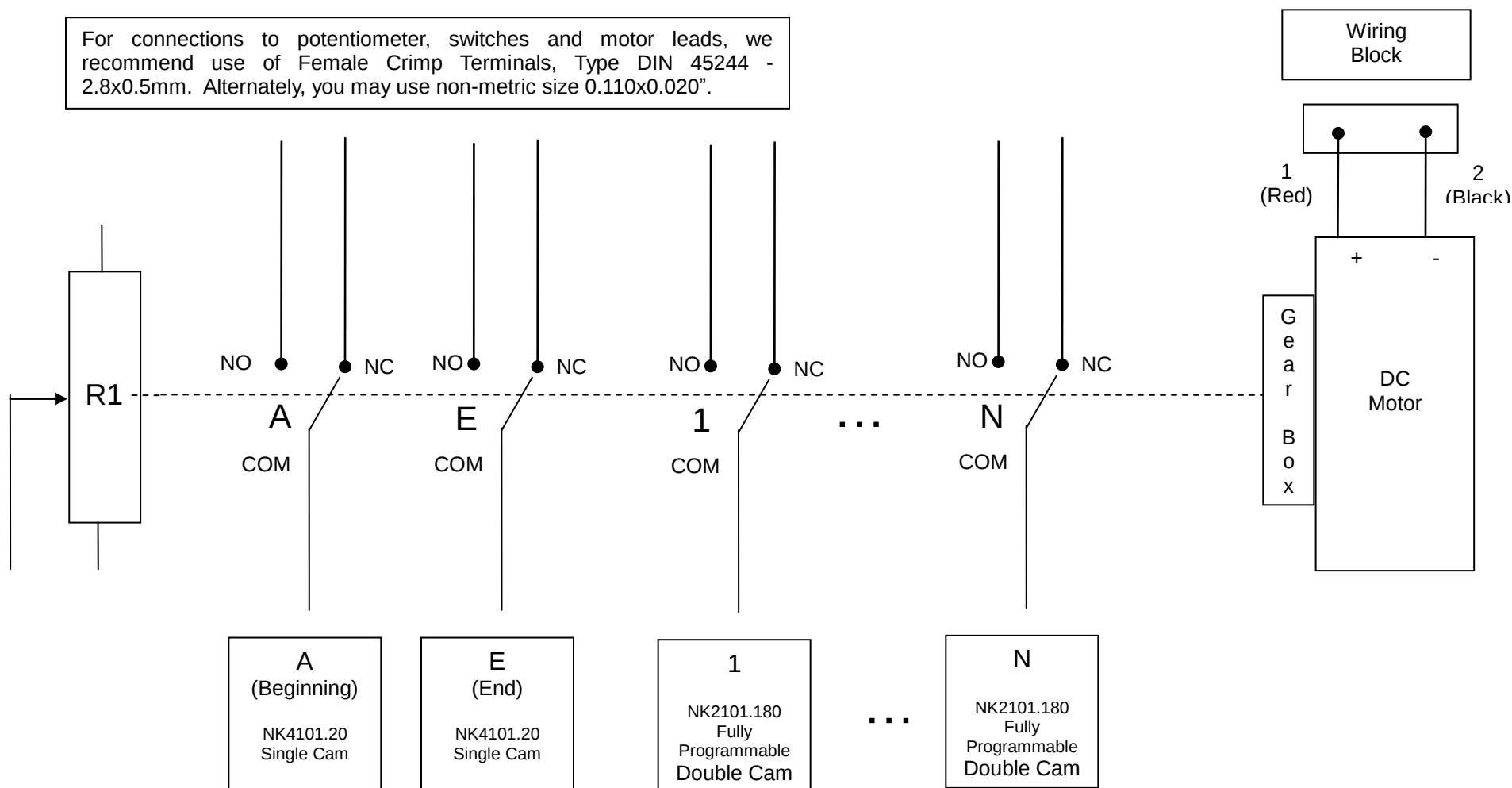
meant for the potentiometer choice:

R1=10KΩ, R2=5KΩ, R3=20KΩ

Special products will be produced under a new article number.

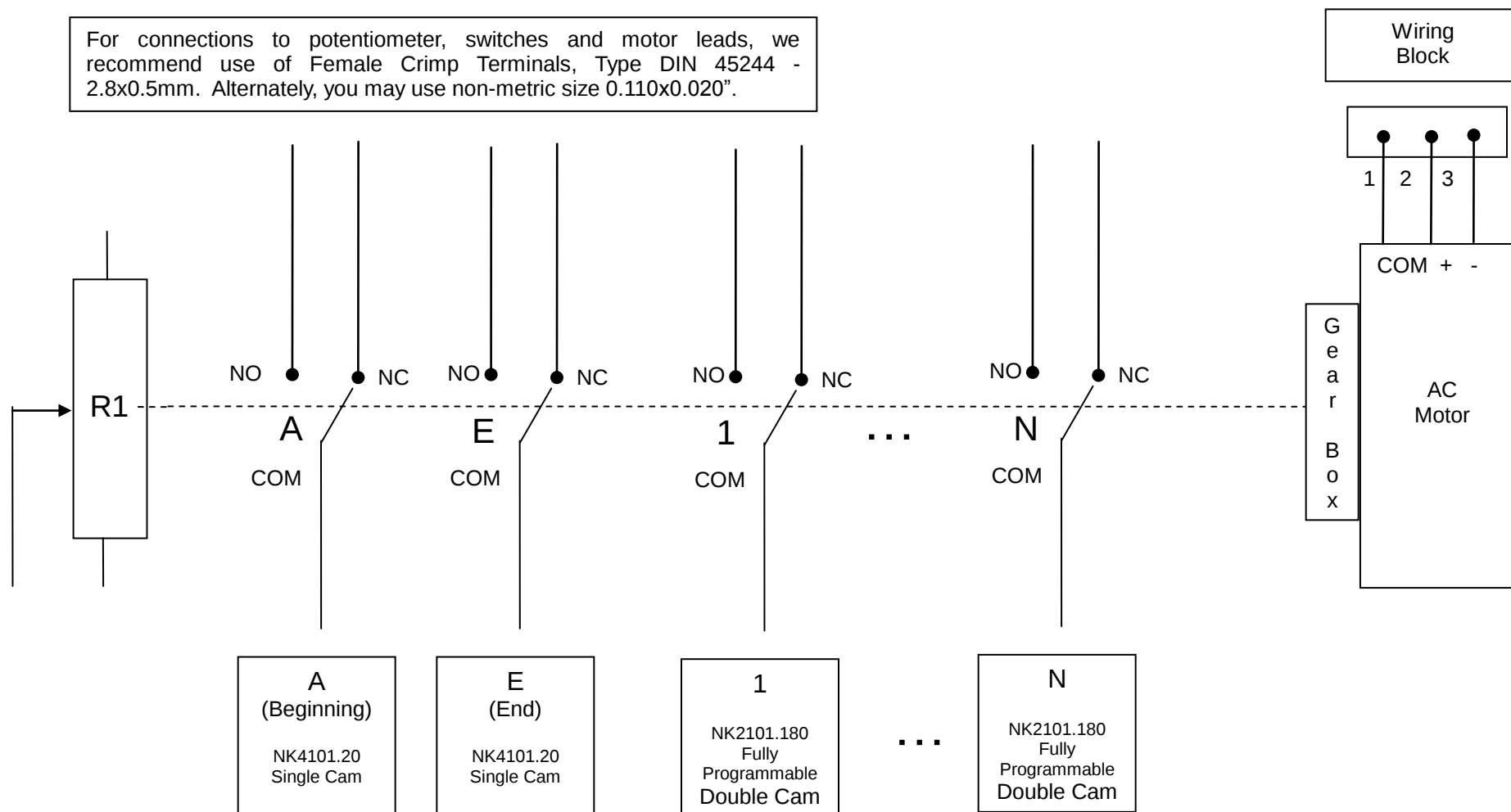
## DC Direct Drive Motorized Potentiometer Electrical Diagram (All MP/MPF/MPP/MPR/etc. Series)

For connections to potentiometer, switches and motor leads, we recommend use of Female Crimp Terminals, Type DIN 45244 - 2.8x0.5mm. Alternately, you may use non-metric size 0.110x0.020".



# AC Direct Drive Motorized Potentiometer Electrical Diagram (All MP/MPF/MPP/MPR/etc. Series)

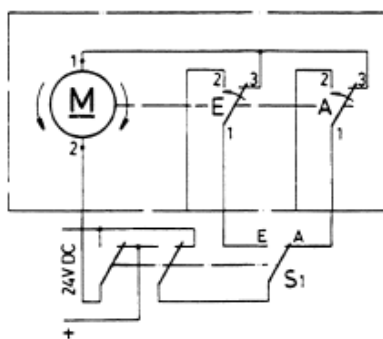
For connections to potentiometer, switches and motor leads, we recommend use of Female Crimp Terminals, Type DIN 45244 - 2.8x0.5mm. Alternately, you may use non-metric size 0.110x0.020".



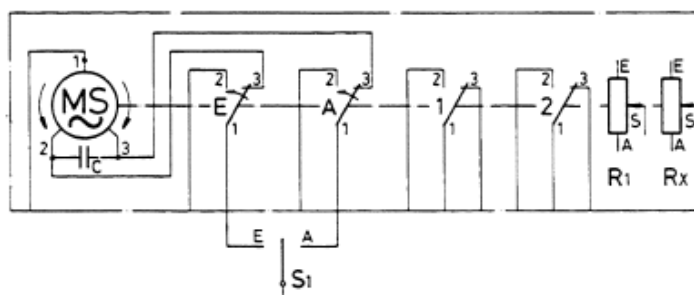
## Typical MP Series Motorized Potentiometer Connections

The two primary single-cam switches are designated **A** (German "Anfang"=Beginning) and **E** (German "Ende"=End) which are typically set to the 0% and 100% limits, respectively, of the potentiometer. The A/E limit switches can also be set to any other region of the potentiometer that is specific to an application.

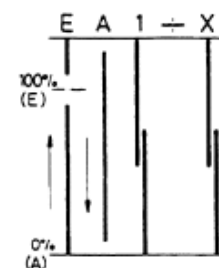
Motorpotentiometer



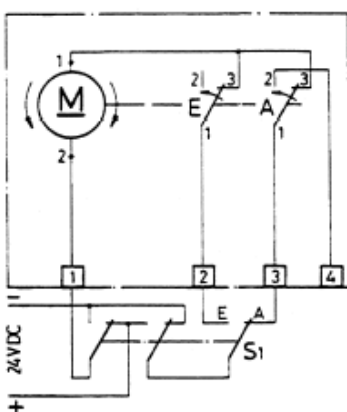
Motorized potentiometer



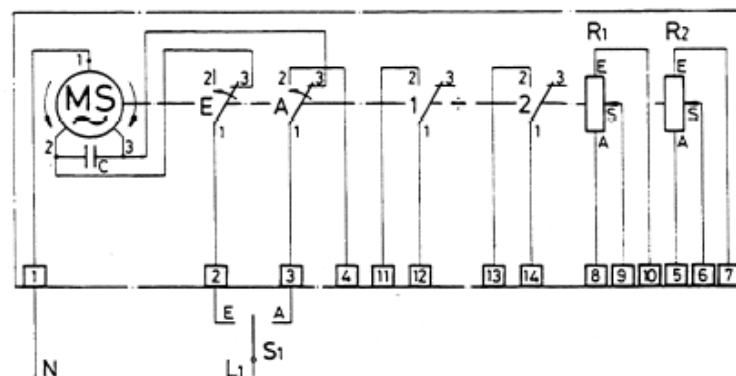
MPP, MPR, MPF, MPRE, MPPS, MPPR, MPZ



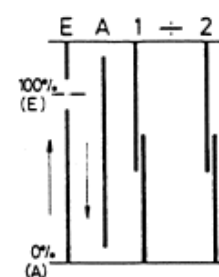
Motorpotentiometer



Motorized potentiometer



MPC (KG13)



## Cam Programming (General Guidance)

Single cams can produce only a fixed single pulse (20° wide) if switch channel uses standard NV4101.20 single cams.

Double cams (NK4201.180) can be programmed for a switching profile of 4° to 356°. Due to the design of the cam, switches cannot be disengaged for more than 180°.

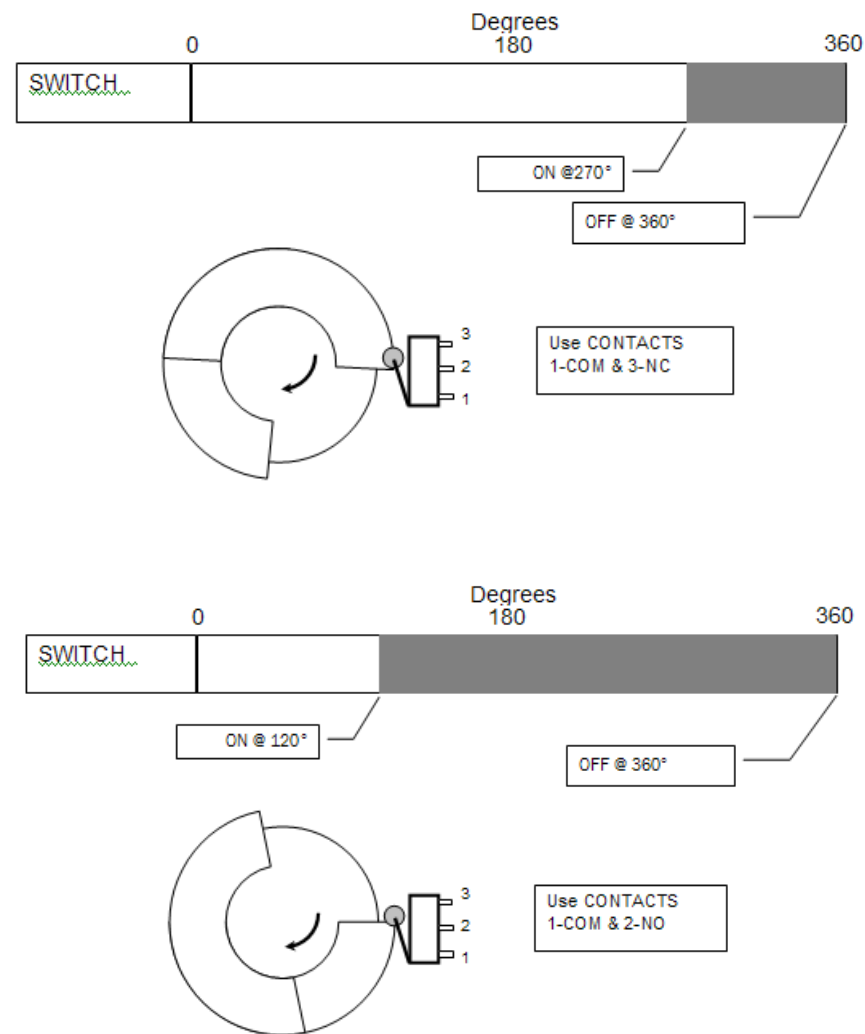
If the system requires that the switch does not make contact for more than 180°, the normally closed (NC) contact must be wired. For programs greater than 180°, the NO contact is used. The right-hand illustrations depict these two cam programming cases. It is always helpful to diagram the desired switch settings before wiring and programming the cams.



KS25B4 Precision  
Snap Action Switch



S84 Series  
Enclosed Microswitch



## Micronor Switch Types (General Guidance)

### MICRONOR Standard

Most Micronor standard products used the proprietary and proven Model KS25B4 Precision Snap Action Switch. Electrical rating is 4A 250 VAC/ 1A 60 VDC.

For replacements, order: **Micronor P/N 6099.00.035**



### For Special Heavy Duty Applications

Some applications require a higher rated, enclosed microswitch. Typical for use in special motor potentiometer, cam timers and rotary limit switch applications is the S84 series Controlled Opening Microswitch. Electrical rating is 10A 250 VAC/6A 24VDC.

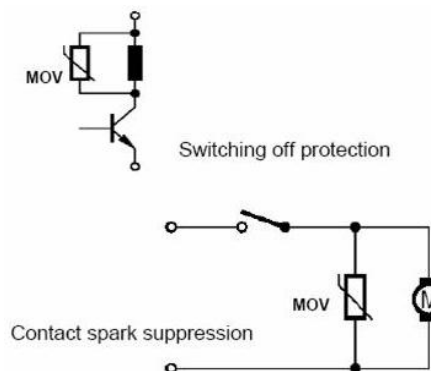
For replacements, order: **Micronor P/N 6099.26.024**



Higher rated microswitches (to 20A) as well as MIL-rated switches are also available.

### Contact Arcing Protection With Relay (Inductive) Loads

Consult [www.littlefuse.com](http://www.littlefuse.com) for MOV (varistor) product information and application notes



GENERIC Wiring and Cam Programming Table (to be filled in by user)

| Wiring Block<br>Contact No. | CAM<br>PROGRAM<br>(in Degrees) |     | SWITCH CONTACT<br>DESIGNATION |    |    | Customer<br>Circuit ID | SWITCHING DIAGRAM                                                                                          |      |  |
|-----------------------------|--------------------------------|-----|-------------------------------|----|----|------------------------|------------------------------------------------------------------------------------------------------------|------|--|
|                             | ON                             | OFF | COM                           | NC | NO |                        | 0°                                                                                                         | 360° |  |
|                             |                                |     |                               |    |    |                        |  Denotes Closed Contact |      |  |
| 1                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 2                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 3                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 4                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 5                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 6                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 7                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |
| 8                           |                                |     |                               |    |    |                        |                                                                                                            |      |  |

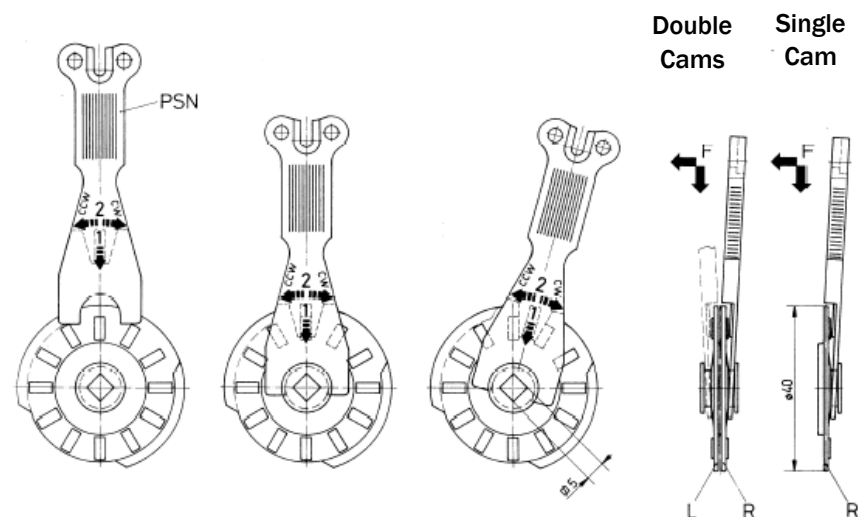
**EXAMPLE:**

| Wiring Block<br>Contact No. | CAM<br>PROGRAM<br>(in Degrees) |     | SWITCH CONTACT<br>DESIGNATION |    |    | Customer<br>Circuit ID | SWITCHING DIAGRAM                                                                                            |      |  |
|-----------------------------|--------------------------------|-----|-------------------------------|----|----|------------------------|--------------------------------------------------------------------------------------------------------------|------|--|
|                             | ON                             | OFF | COM                           | NC | NO |                        | 0°                                                                                                           | 360° |  |
|                             |                                |     |                               |    |    |                        |  Denotes Closed Contact |      |  |
| 1                           | 10                             | 90  | X                             |    |    | SW1                    |                         |      |  |
| 2                           |                                |     |                               | X  |    | SW1                    |                                                                                                              |      |  |
| 3                           | 45                             | 225 | X                             |    |    | SW2                    |                         |      |  |
| 4                           |                                |     |                               |    | X  | SW2                    |                                                                                                              |      |  |

## Cam Programming (NK Series with PSN Black key)

Programming the switching profile is done with the PSN (black) cam programming tool. The general technique is shown in the diagram to the right.

- Step 1 Insert PSN key into unit, as shown in right hand figure, with the numbered side away from the cam and the notched side towards the cam.
- Step 2 While gently applying pressure against the cam with the key, rotate the cam to the desired position.
- Step 3 For double cams (NK4201), adjust the other side of the cam by flipping over the key and repeating steps 1 and 2 on the other side of the cam.
- Step 4 Test the unit to confirm that the switch engages and disengages at the selected positions.



**Single Cam (20°)**

**Double Cam (1 side Shown, 180°)**

