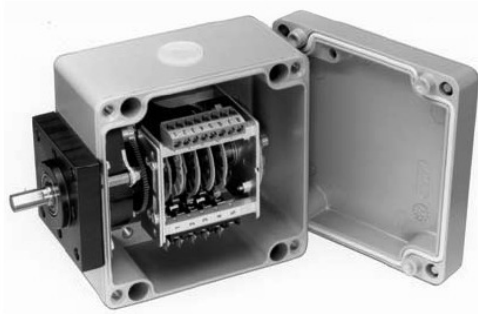


Serie KWG 120



- **Programmkanäle** (einstellbar) 3 / 5
Program channel (free setting)
- **Eingangsübersetzungen** 1:1...2500 : 1
Input ratios
- **Mikroschalter** 4A 250V AC 1A 60V DC
Snap action switches
- **Schutzart** IP 64
Protection

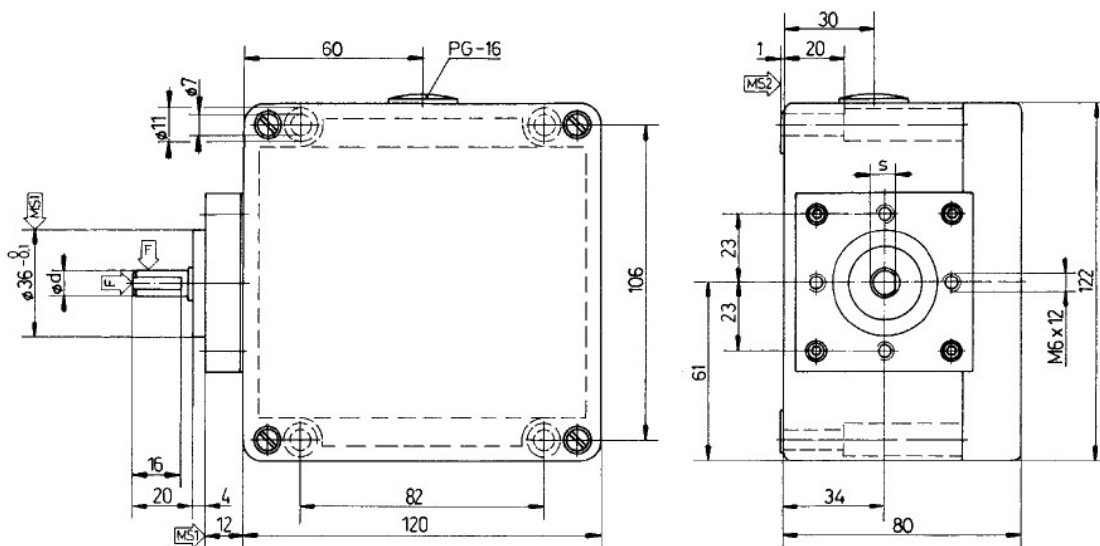
Outline drawing

$\varnothing d = 9-h8$

$s = 8,5$

$F = \varnothing 40\text{ N } \downarrow 80\text{ N}$

MS = Montagefläche / Mounting surface



Serie KWG 120

KWG120 3 U1 1

Alu-diecasting / Colour (RAL 7001 grey)

Switches:

- 3 Switches (KS25B4 or KS26B4)
- 3** = 3 Program channels free setting (NK4201)
- Indicator scale S360 (0°... 360°)

- 5 Switches (KS25B4 or KS26B4)
- 5** = 5 Program channels free setting (NK4201)
- Indicator scale S360 (0°... 360°)

Input ratios (Shaft to switches): --> U = one stage; M = more stage

U1 = 1:1	M1 = 12,5:1
U2 = 1,25:1	M2 = 20:1
U3 = 1,5:1	M3 = 25:1
U4 = 2:1	M4 = 37,5:1
U5 = 2,6:1	M5 = 40:1
U6 = 2,75:1	M6 = 52,5:1
U7 = 3,5:1	M7 = 75:1
U8 = 4:1	M8 = 100:1
U9 = 5:1	M9 = 200:1
U10 = 6,5:1	M10 = 300:1
	M11 = 420:1
	M12 = 600:1
	M13 = 750:1
	M14 = 1600:1
	M15 = 2250:1
	M16 = 2500:1

Interface:

- 0** = -
- 1** = MR 265

Comment:

Standard wiring set (included):

- Screw terminal to 2,5 mm²
- Cable (AWG 22); incl. 2 x flat connector

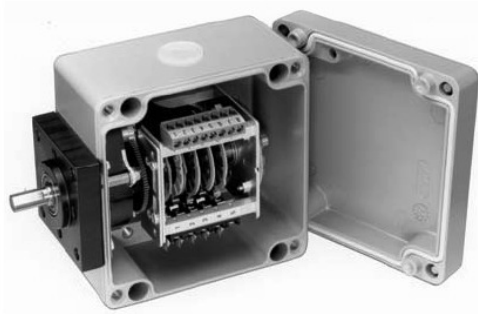
Serie KWG 120

Standardverbindingssatz (inclusive) / Standard wiring set (included)

Anzahl Schalter	Number of switches	L3	L5	
Schraubklemme	Screw terminal	6	8	2,5 mm ²
Anschlusslitze (inkl. 2 x Flachstecker)	Cable (incl. 2 x flat connector)	6	8	200 mm x 0,34 mm ² (AWG 22)
Anschlusslitze (inkl. 2 x Flachstecker)	Cable (incl. 2 x flat connector)	2	3	70 mm x 0,34 mm ² (AWG 22)

Technische Änderungen vorbehalten / Subject to change without prior notice

Serie KWG 160



- **Programmkanäle** (einstellbar)
Program channel (free setting) 7 / 10
- **Eingangsübersetzungen**
Input ratios 1:1...2500 : 1
- **Mikroschalter**
Snap action switches 4A 250V AC 1A 60V DC
- **Schutzart**
Protection IP 64

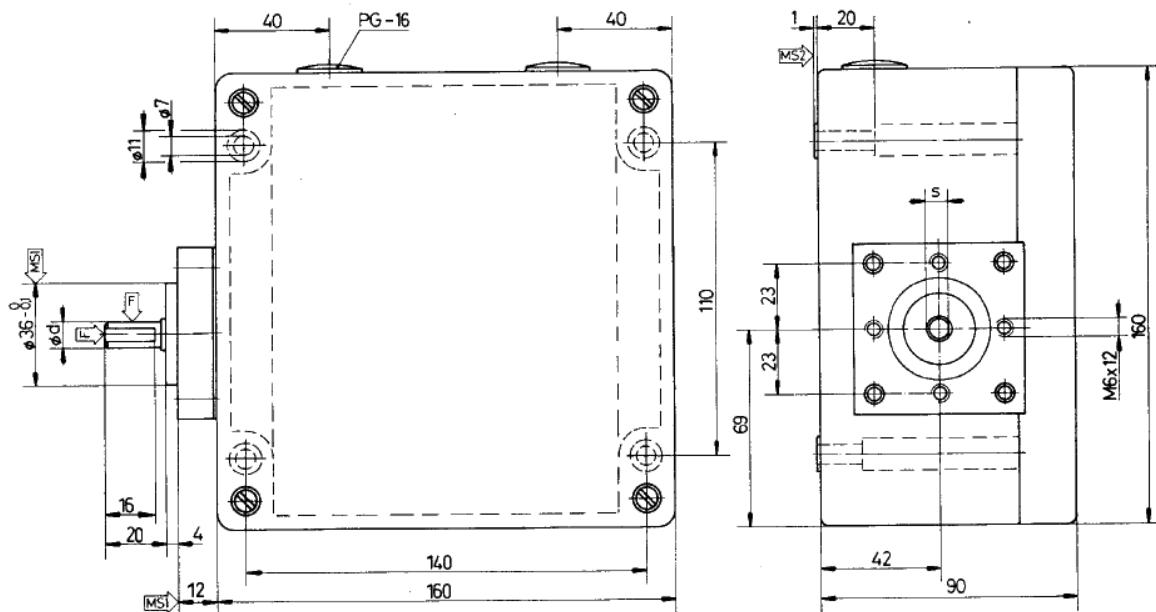
Outline drawing

$\varnothing d = 9\text{-}h8$

$s = 8,5$

$F = \Rightarrow 40\text{ N } \Leftarrow 80\text{ N}$

MS = Montagefläche / Mounting surface



Serie KWG 160

KWG160 7 U1 L7

Alu-diecasting / Colour (RAL 7001 grey)

Switches:

- 7 Switches (KS25B4 or KS26B4)
7 = 7 Program channels free setting (NK4201)
 Indicator scale S360 (0° ... 360°)
-
- 10 Switches (KS25B4 or KS26B4)
10 = 10 Program channels free setting (NK4201)
 Indicator scale S360 (0° ... 360°)

Input ratios (Shaft to switches): --> U = one stage; M = more stage

U1 = 1:1	M1 = 12,5:1
U2 = 1,25:1	M2 = 20:1
U3 = 1,5:1	M3 = 25:1
U4 = 2:1	M4 = 37,5:1
U5 = 2,6:1	M5 = 40:1
U6 = 2,75:1	M6 = 52,5:1
U7 = 3,5:1	M7 = 75:1
U8 = 4:1	M8 = 100:1
U9 = 5:1	M9 = 200:1
U10 = 6,5:1	M10 = 300:1
	M11 = 420:1
	M12 = 600:1
	M13 = 750:1
	M14 = 1600:1
	M15 = 2250:1
	M16 = 2500:1

Standard wiring set (included):

- 7 Switches
L7 = 12 Screw terminal 2,5 mm2
 12 Cable 200 mm x 0,34 mm2 (AWG 22); incl. 2 x flat connector
 5 Cable 70 mm x 0,34 mm2 (AWG 22); incl. 2 x flat connector
-
- 10 Switches
L10 = 16 Screw terminal 2,5 mm2
 16 Cable 200 mm x 0,34 mm2 (AWG 22); incl. 2 x flat connector
 7 Cable 70 mm x 0,34 mm2 (AWG 22); incl. 2 x flat connector

Serie KWG 160

Standardverbindingssatz (inclusive) / Standard wiring set (included)

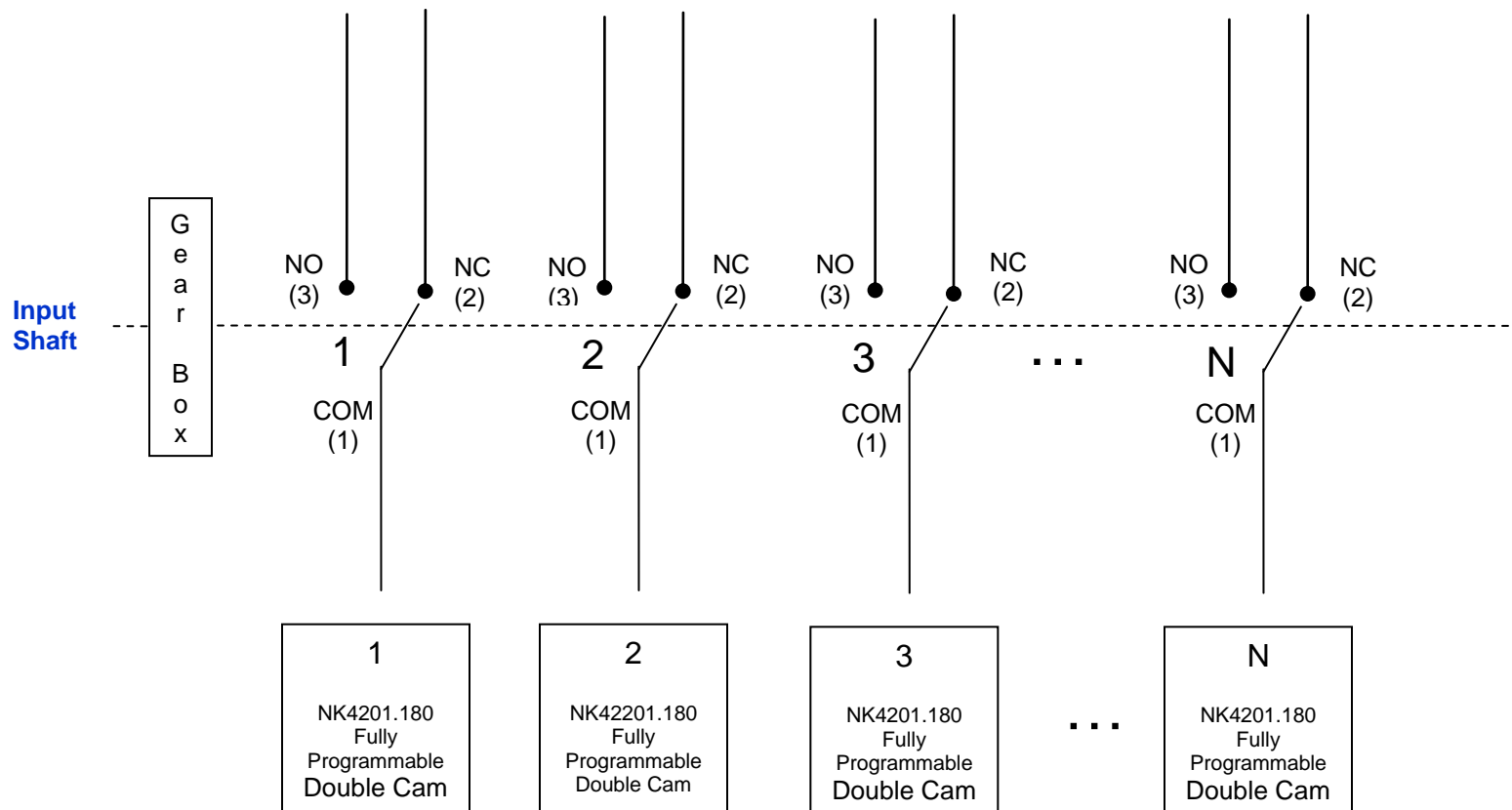
Anzahl Schalter	Number of switches	L7	L10	
Schraubklemme	Screw terminal	12	16	2,5 mm ²
Anschlusslitze (inkl. 2 x Flachstecker)	Cable (incl. 2 x flat connector)	12	16	200 mm x 0,34 mm ² (AWG 22)
Anschlusslitze (inkl. 2 x Flachstecker)	Cable (incl. 2 x flat connector)	5	7	70 mm x 0,34 mm ² (AWG 22)

Technische Änderungen vorbehalten / Subject to change without prior notice

Geared Limit Switch General Schematic

NOTE 1: 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".

NOTE 2: KS25B4 COM-NO-NC terminal numbers are show. Other switch types may have different



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°.

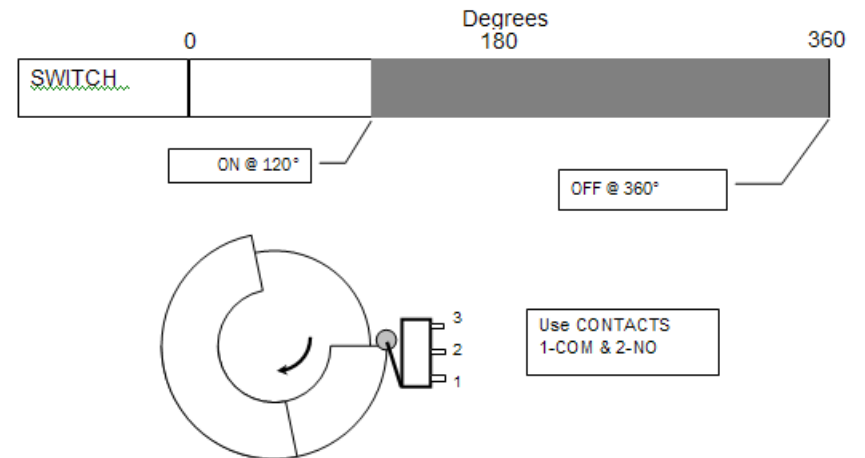
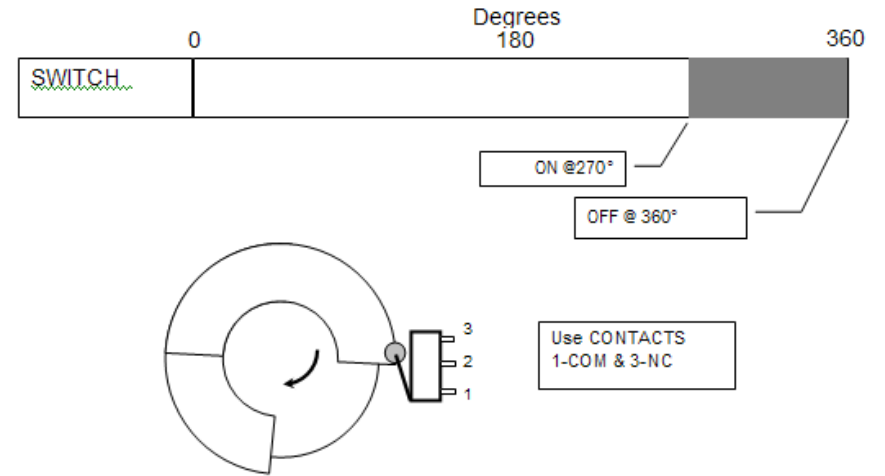
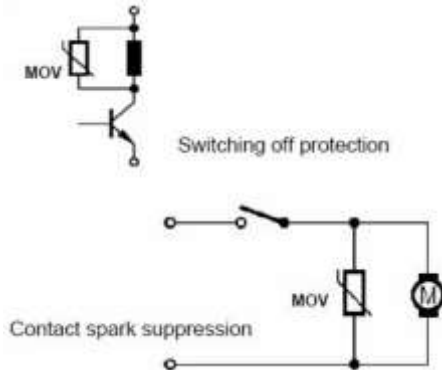
If the system requires that the switch does not make contact for more than 180°, the normally closed (NC) contact must be wired. For programs greater than 180°, the NO contact is used. The right-hand illustrations depict these two cam programming cases. It is always helpful to diagram the desired switch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

Contact Arcing Protection With Relay (Inductive) Loads

Consult www.littlefuse.com for MOV (varistor) product information and application notes.



KS25B4 Precision Snap Action Switch



Cam Programming (NK Series with PSN Black key)

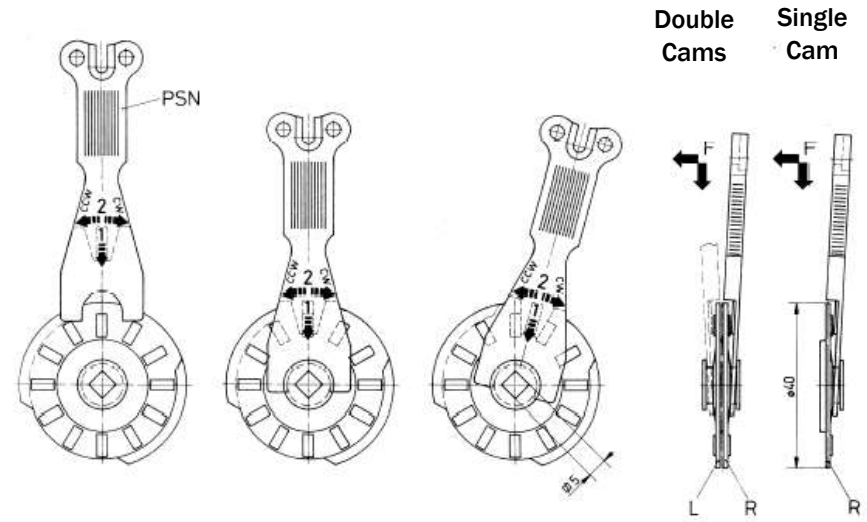
Programming the switching profile is done with the PSN (black) cam programming tool. The general technique is shown in the diagram to the right.

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°)



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

Wiring Block Contact No.	CAM PROGRAM (in Degrees)		SWITCH CONTACT DESIGNATION			Customer 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 Contact No.	CAM PROGRAM (in Degrees)		SWITCH CONTACT DESIGNATION			Customer 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		