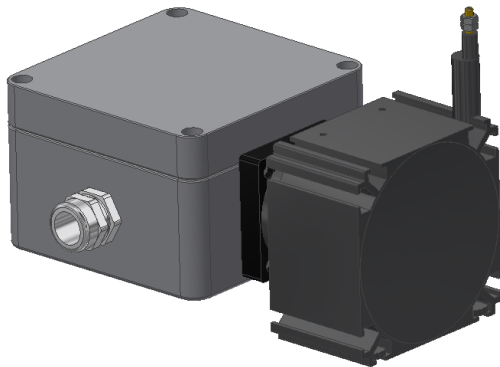


## Series KWGW



### For Industrial, Crane's and Lockings

- ➔ Large variety of wire lengths
- ➔ Different micro switches
- ➔ 1x PG16 Cable output
- ➔ Protection class IP64
- ➔ Protection against contact
- ➔ Interfaces and Potentiometer options

### Product description

The combination of a gear limit switch and a cable pull is a simple mechanical combination for limiting a length or approaching fixed distance measuring points. With the option of an MR265 (4-20mA) interface or a potentiometer, the entire travel can be monitored

The cast aluminum housing is robust and safe against external influences and offers 100% contact protection

### Application

This heavy duty geared limit switch could be used to control every end switch application in cranes, mining, automotives and wind power.

### Technical specifications

---

Temperature range	-20 °C +80 °C
MTBF (IEC 60050)	ON/OFF 10 Mio cycles 200'000 hours
Protection	IP 64 EN 60 529
Humidity	40% rh

**Series KWGW**



**Microswitch**

Order code	Picture	Description
0		KS25B4 changeover contact for cable shoe 2.8x0.55mm silver contact switching current 4A 250 VAC / 1A 60VDC
1		KS26B4 changeover contact for cable shoe 2.8x0.55mm gold contact switching current 4A 250 VAC / 1A 60VDC

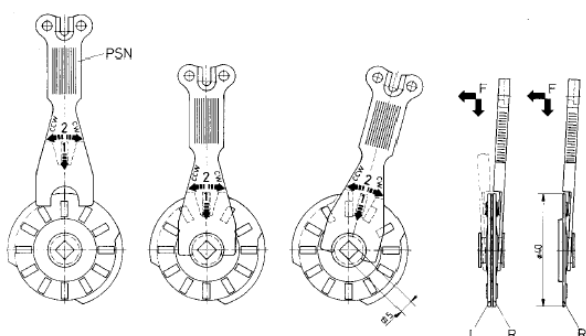
Mechanical life time	> 20 Mill.
Switching frequency	5 Hz
Contact chatter time	<4 ms
Actuating speed	>10 µm/s
Contact break	0,6 mm
Contact pressure	0,2 N

**Cam types and adjustment**

Order code	Picture	Description
0		single cam 20° adjustable with included PSN Key
1		double cam adjustable with included PSN Key free programmable from 6° - 180°

**Adjusting guideline of NK cams**

To adjust the NK pulley - insert the PSN key into the cam, press lightly and adjust the cam pulley by turning the key.

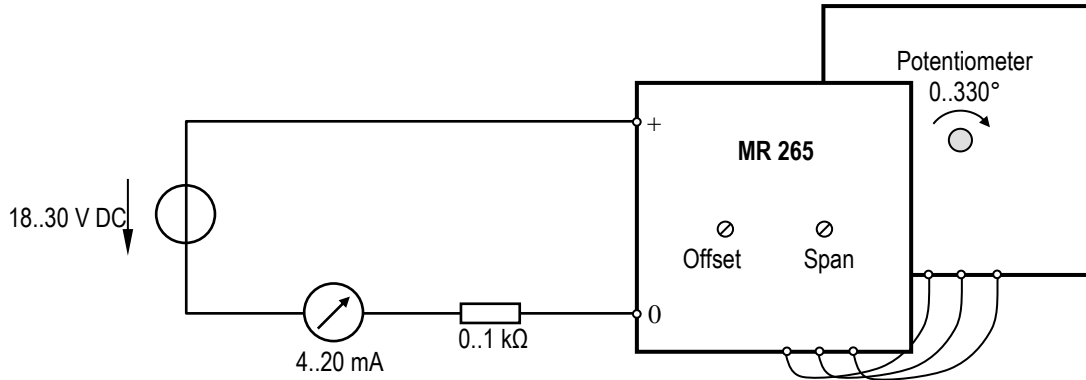


## Series KWGW



### Interface MR265 (optional)

MR265 Adjustable current interface 4...20 mA (2- wire system)



**Connection**

Power supply:  
Current consumption:  
Max. Output power:  
Max. load:  
Output current:  
Linearity:  
Temperature coefficient:  
Temperature range:

**2- wire system**

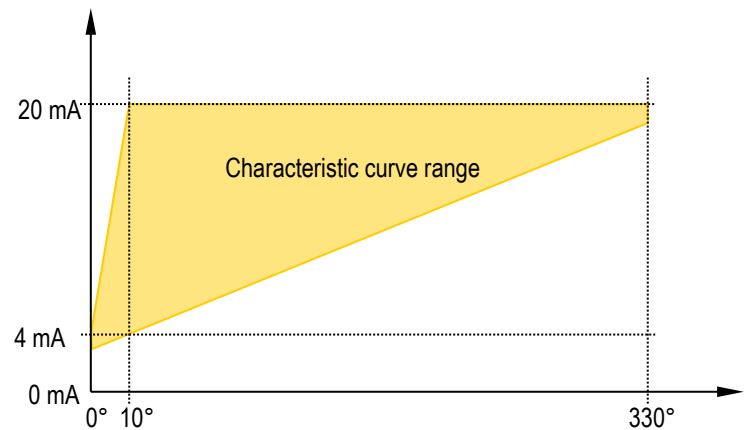
18...30V DC (Specifications apply at 24V)  
4...20 mA  
400 mW  
1 kΩ  
4...20 mA  
± 0.5 %  
100 ppm/K  
0...70°C

**Adjustment:**

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. Span: 48.5 μA/°  
Max. Span: 1.6 mA/°

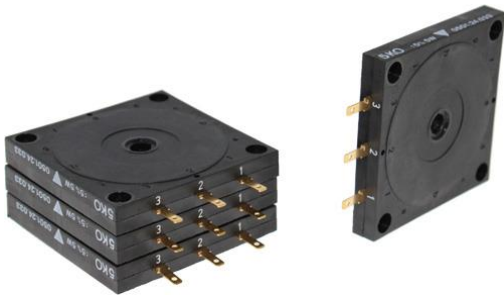
With this values we get a range for the output characteristic that is shown in the graphic aside.



## Series KWGW



### Potentiometer (optional)



- ➔ High resolution
- ➔ Power rating 5W
- ➔ With profile shaft
- ➔ Flat connectors 2.8x0.5mm

### Technical Data


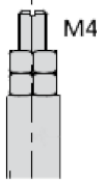
Rotation angle mech. / electr.	0...330° = 0-100%
Resistance tolerance	±5 %
Linearity	<0.15%
Rotation life	1 Mill. turns.
Power rating	5 W (20 °C)
Slider current	100 mA
Temperature coefficient (ENR)	40 ppm / °C nom. (-25 °C +105 °C)
Rotational noise	100 Ω / 1 mA
End resistances	0,5 % R tot. 0,5 Ω
Dielectric strength	900 V DC
Torque	0.5 Ncm
Synchronous run	0.5%
solder and plug socket connections	2 x 2,8 x 0,5 mm (DIN 46244 A)

**Series KWGW**

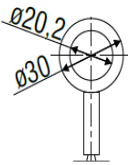
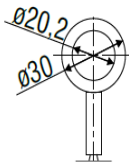
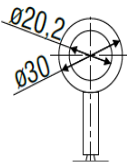
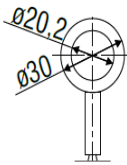


**String wire specification**

Cable Length 1.5m / 3m

Measure Range	1.5m	3m
Linearity over the measuring range	± 0,3 mm	± 0,6 mm
Average distance per revolution	150 mm	260,09 mm
Measuring wire	ø 0,45 mm	ø 0,8 mm
wire connection	Seilhaken	M4 Gewindebolzen
		
Wire acceleration	10 g	7 g
Minimum pull-in force	3,5 N	5 N
Maximum pull-in force	5,5 N	10 N
Vibration	20 g, 20 Hz...2 kHz	
Mechanical shock	50 g, 10 ms	

Cable Length 5m / 7.5m / 10m / 15m

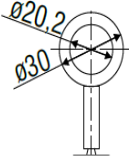
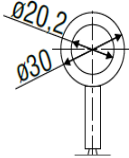
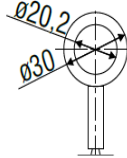
Measure Range	5m	7.5m	10m	15m
Linearity over the measuring range	± 1 mm	± 1.5 mm	± 1 mm	± 1.5 mm
Average distance per revolution	315,07 mm			
Measuring wire	ø 1,0 mm			
wire connection	Ringöse			
				
Wire acceleration	5 g	6 g	3 g	3 g
Minimum pull-in force	4 N	8 N	8 N	8 N
Maximum pull-in force	16 N	24 N	21 N	25 N
Vibration	20 g, 20 Hz...2 kHz			
Mechanical shock	50 g, 10 ms			

**Series KWGW**



**String wire specification**

Cable Length 30m / 40m / 50m

Measure Range	30m	40m	50m
Linearity over the measuring range	± 3 mm	± 4 mm	± 5 mm
Average distance per revolution	500 mm		
Measuring wire	ø 0,8 mm		
wire connection			
			
Wire acceleration	-		
Minimum pull-in force	12 N	11 N	11 N
Maximum pull-in force	22 N	22 N	24 N
Vibration	20 g, 20 Hz...2 kHz		
Mechanical shock	50 g, 10 ms		

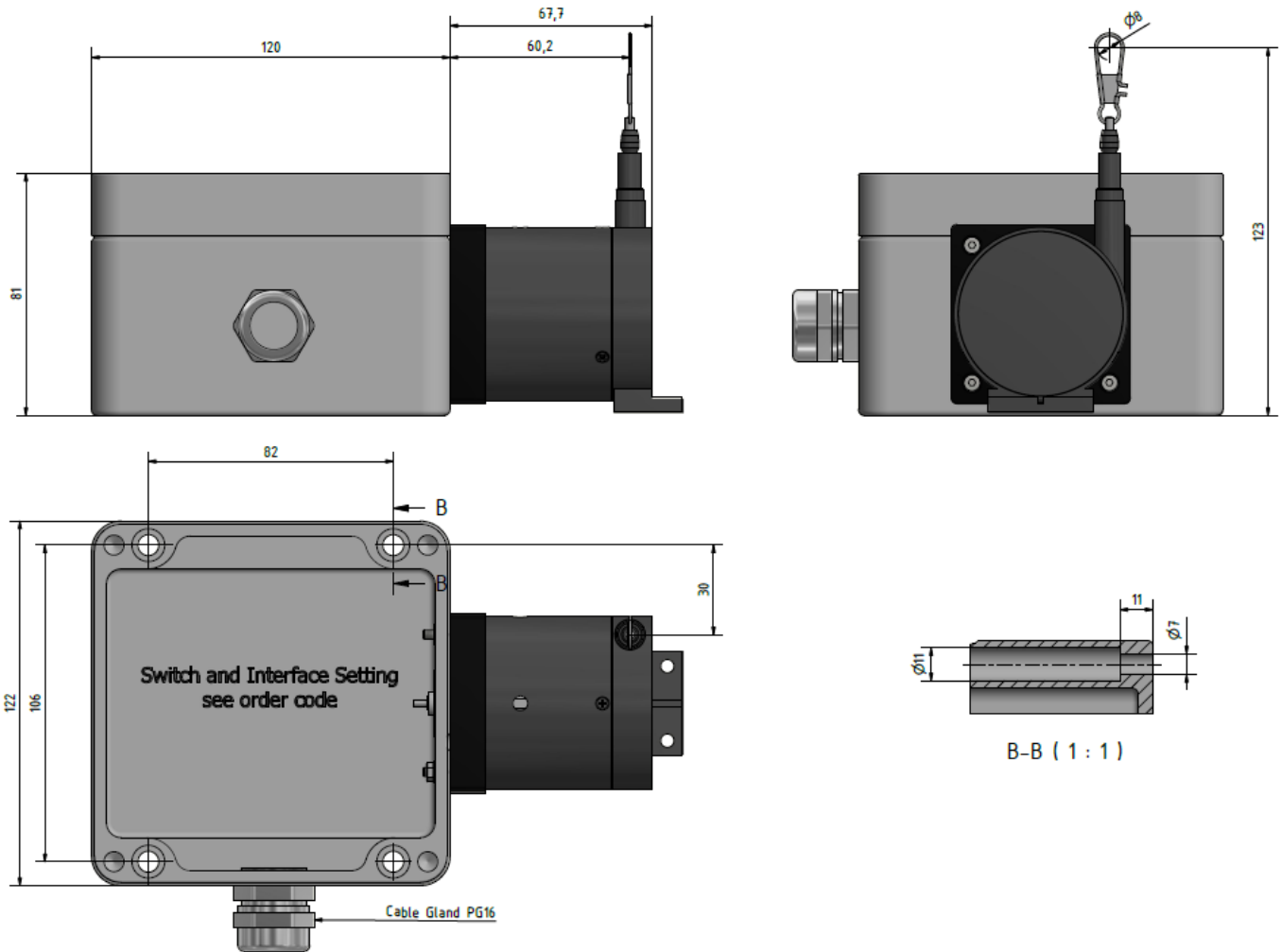
**Series KWGW**



Reference drawings in mm

Size KWG120

Cable Length 1.5m

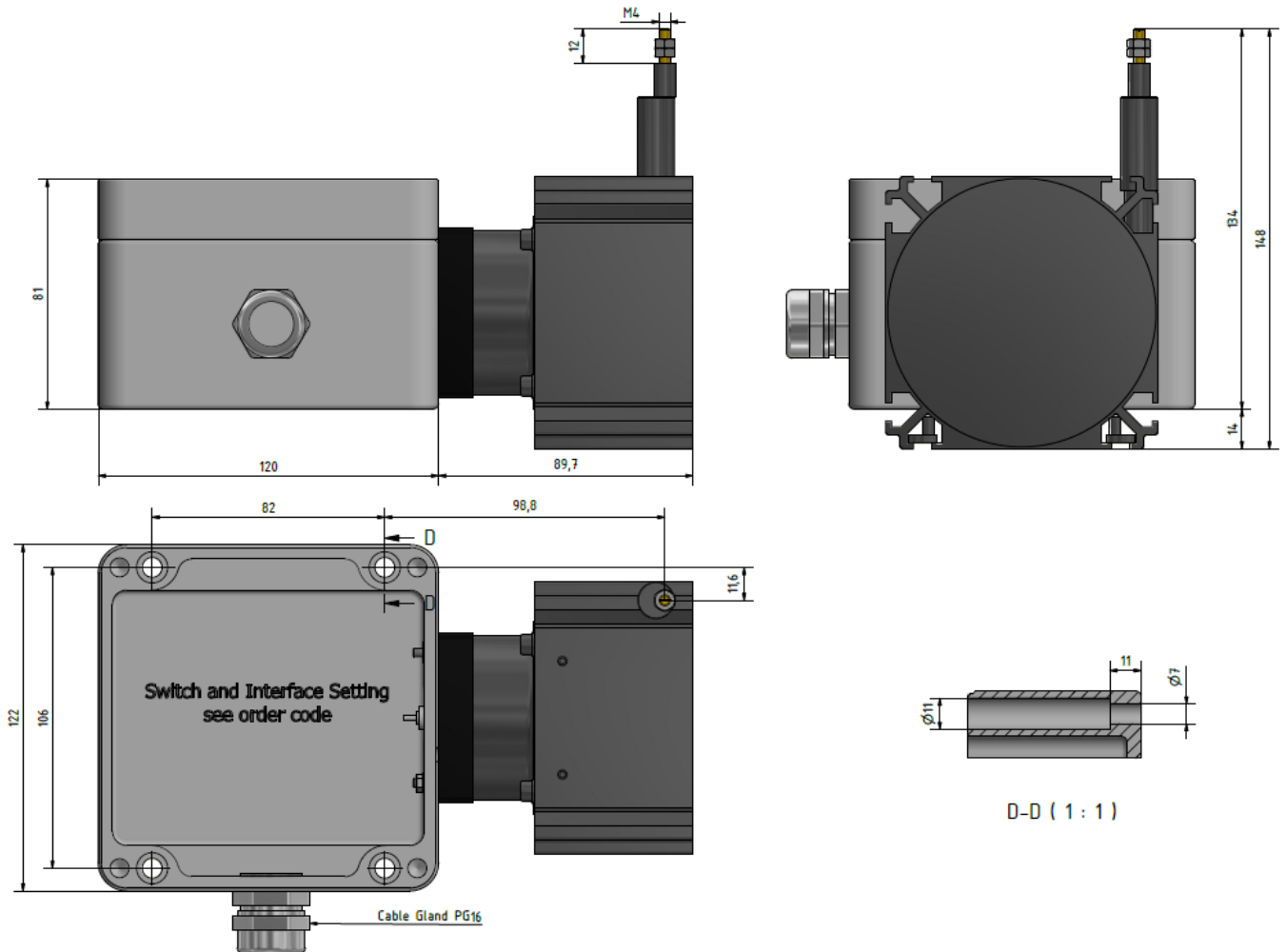


**Series KWGW**



Reference drawings in mm

Size KWG120  
Cable Length 3m



D-D ( 1 : 1 )



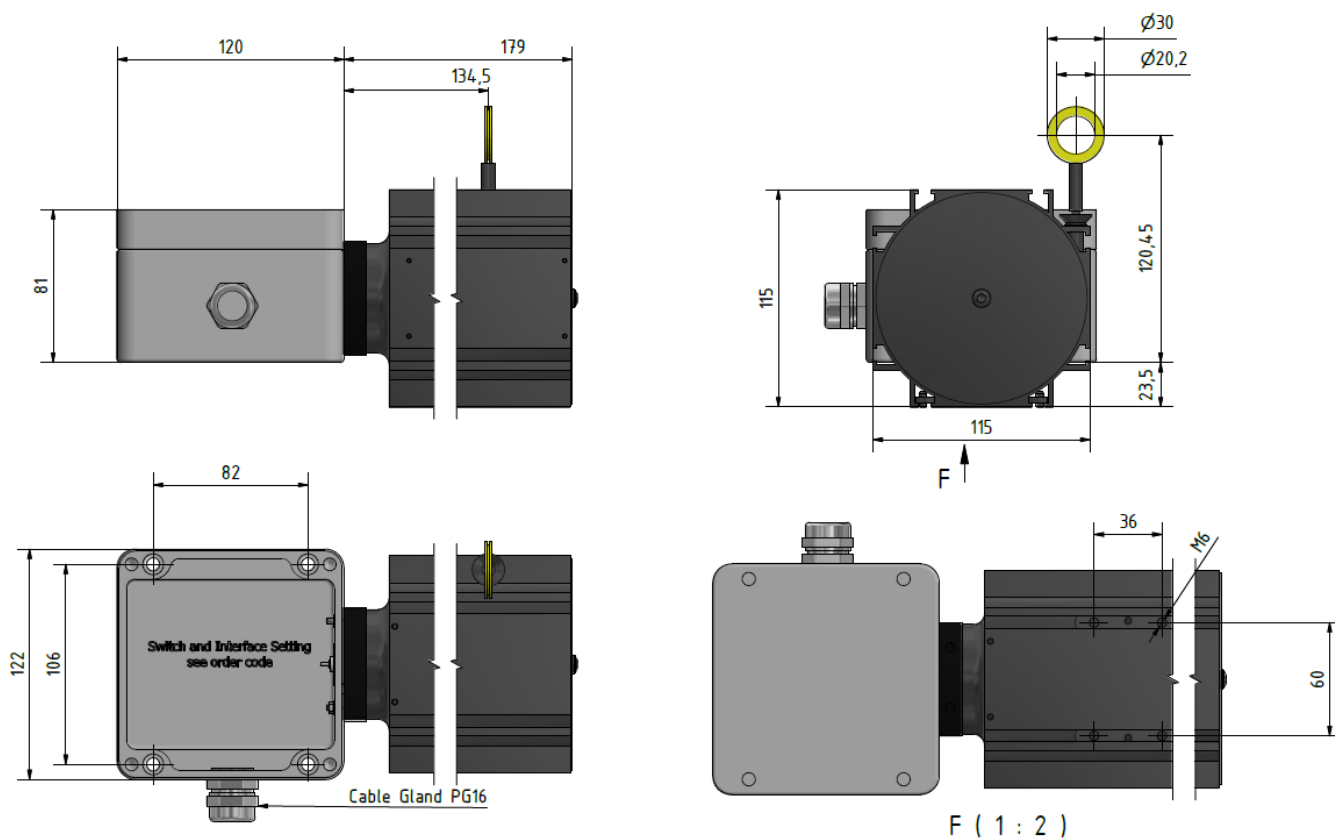
**Series KWGW**



Reference drawings in mm

Size KWG120

Cable Length 5m / 7.5m / 10m / 15m



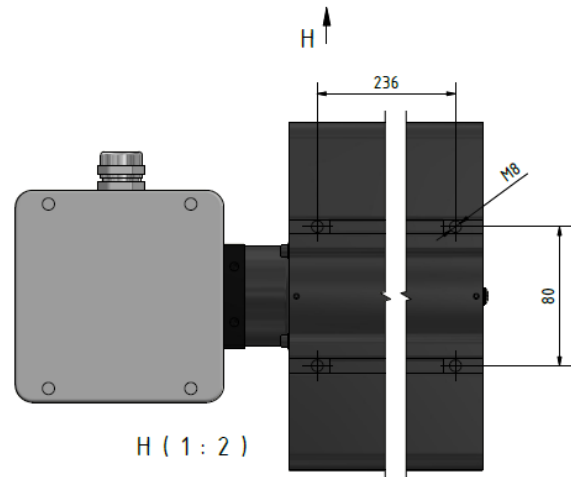
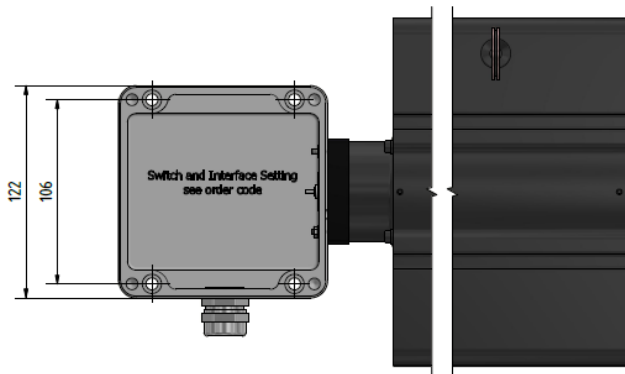
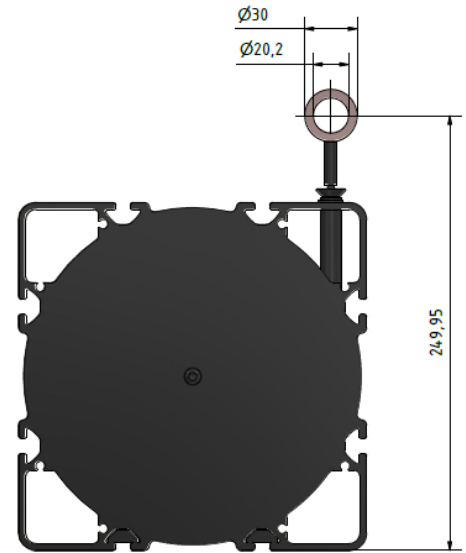
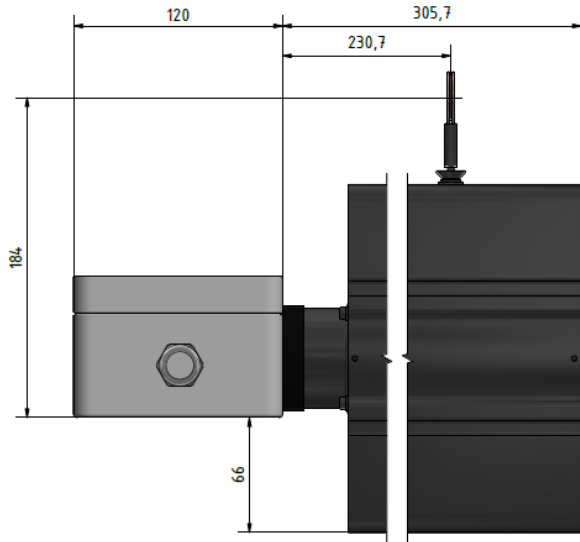
**Series KWGW**



Reference drawings in mm

Size KWG120

Cable Length 30m / 40m / 50m



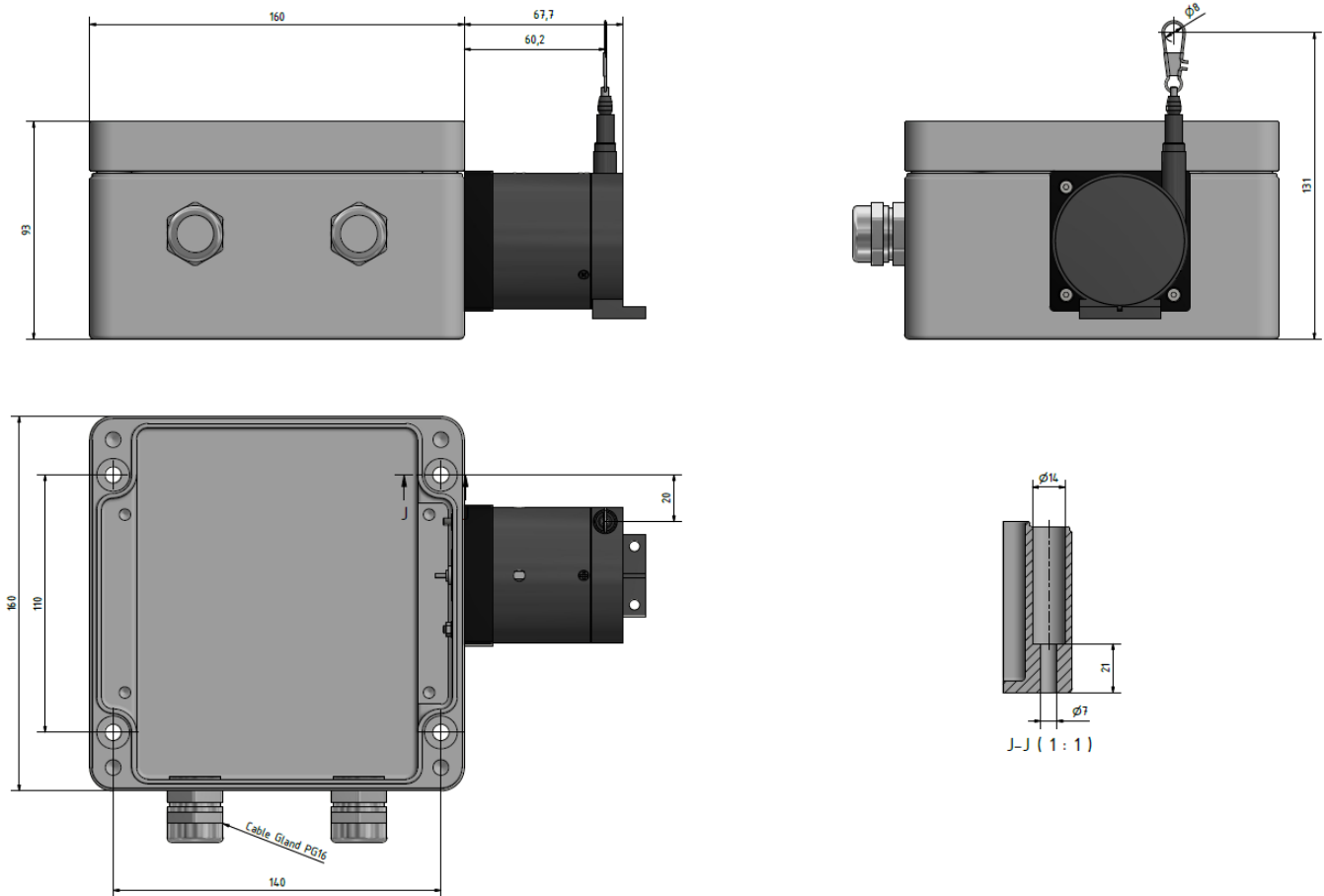
**Series KWGW**



Reference drawings in mm

Size KWG160

Cable Length 1.5m

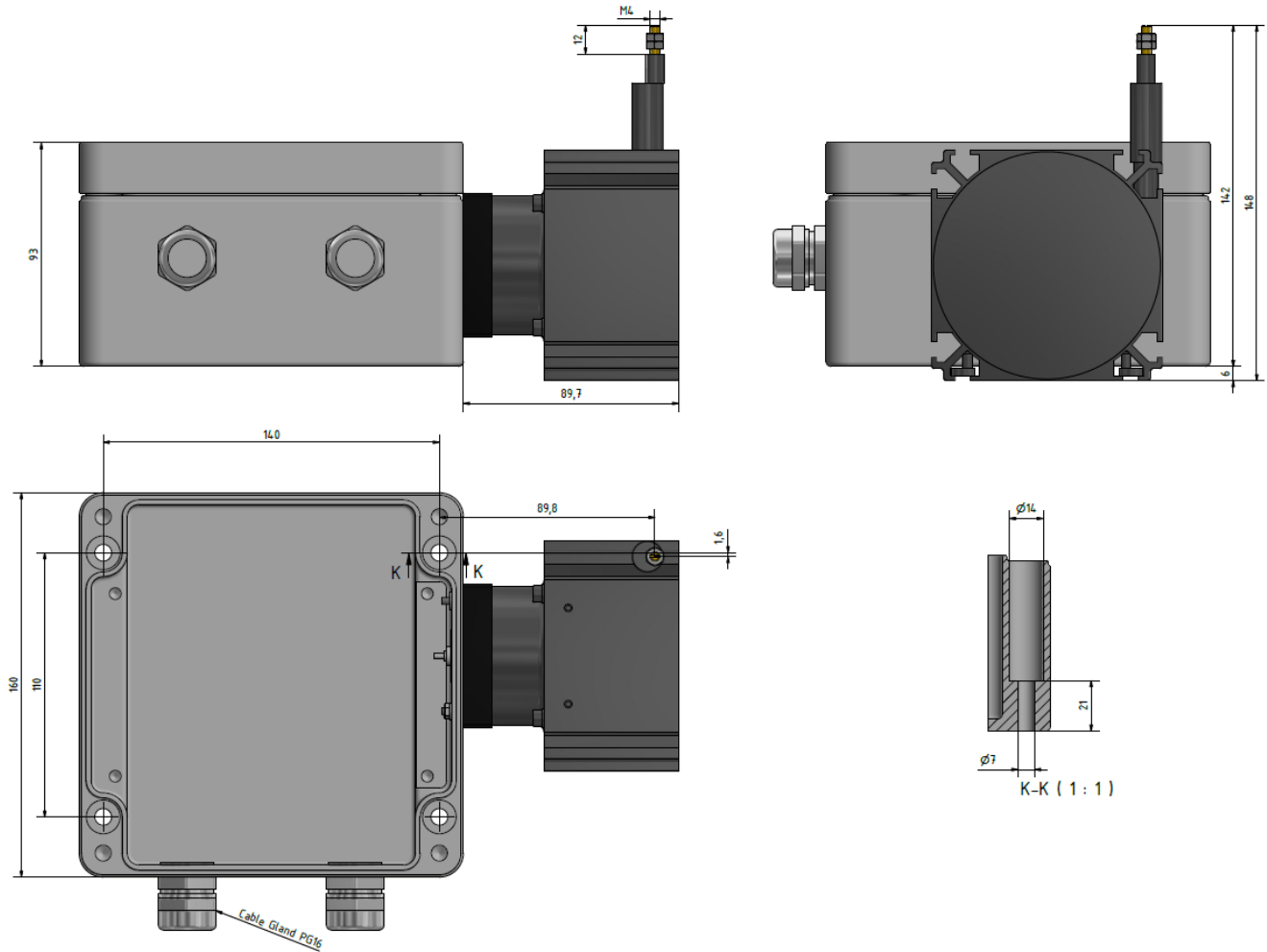


**Series KWGW**



Reference drawings in mm

Size KWG160  
Cable Length 3m



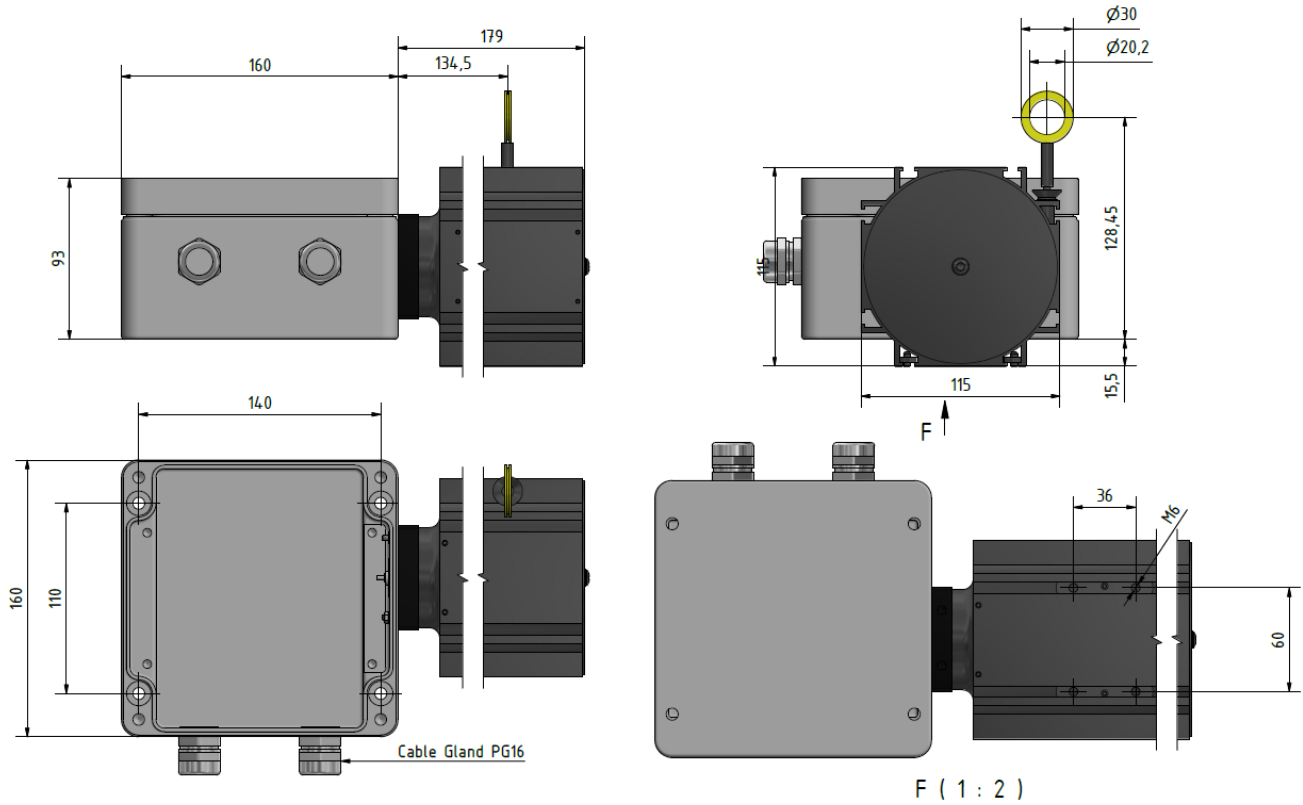
**Series KWGW**



Reference drawings in mm

Size KWG160

Cable Length 5m / 7.5m / 10m / 15m



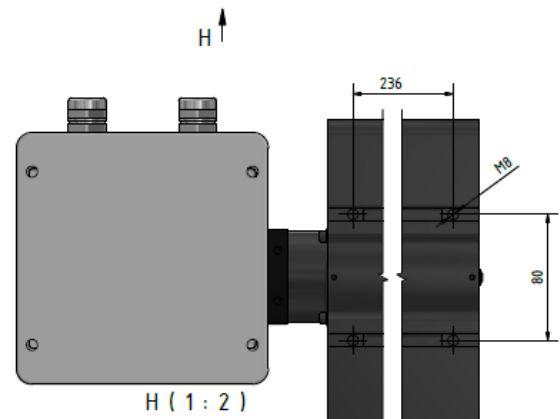
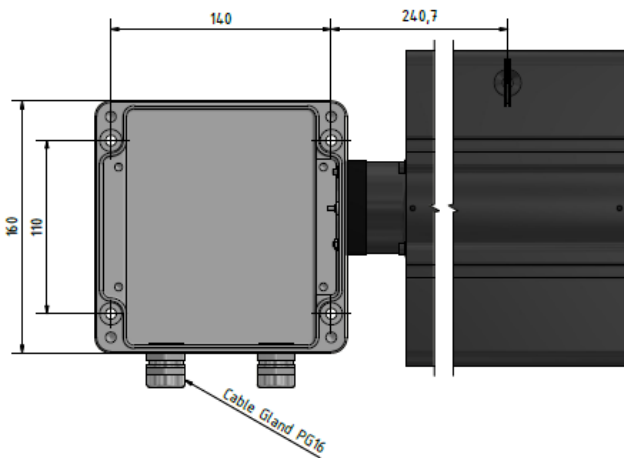
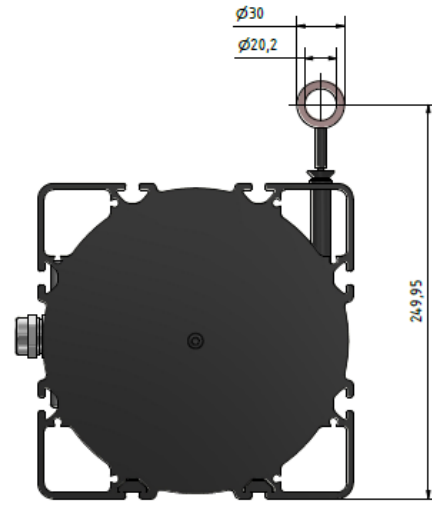
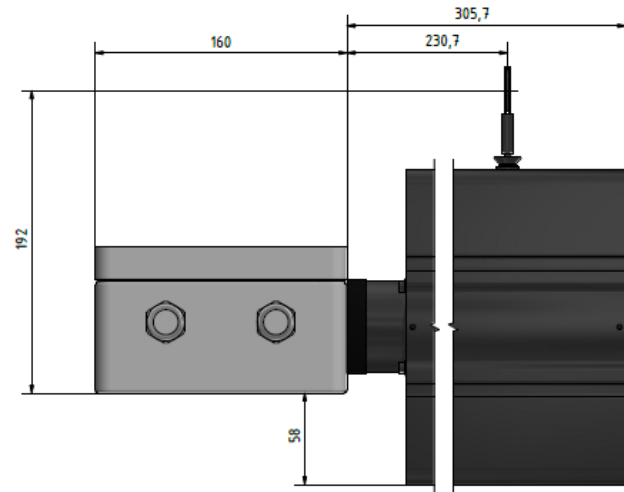
**Series KWGW**



Reference drawings in mm

Size KWG160

Cable Length 30m / 40m / 50m

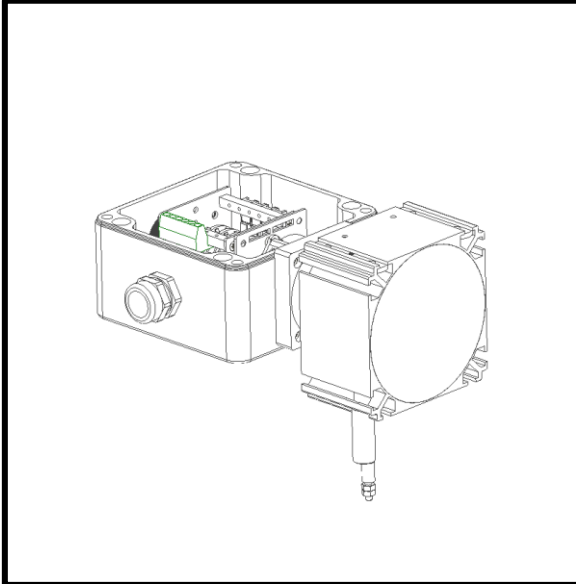


**Series KWGW**

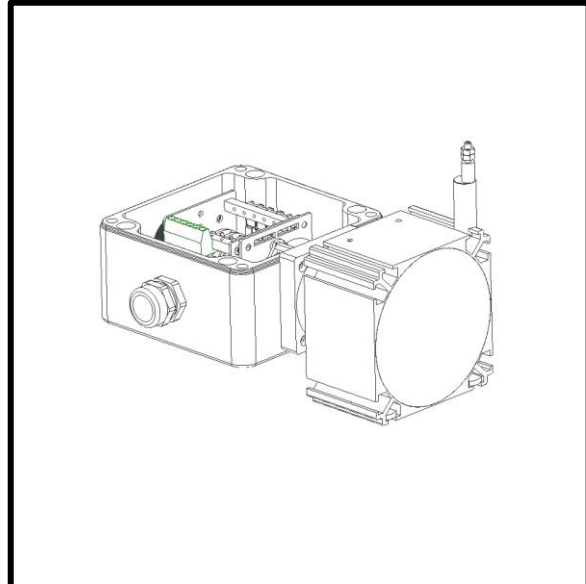


**Direction of Wire output**

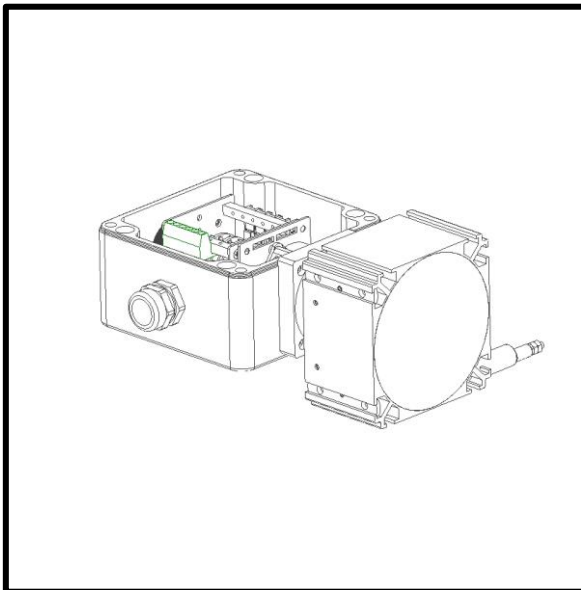
Direction „Down“ Order Code 0



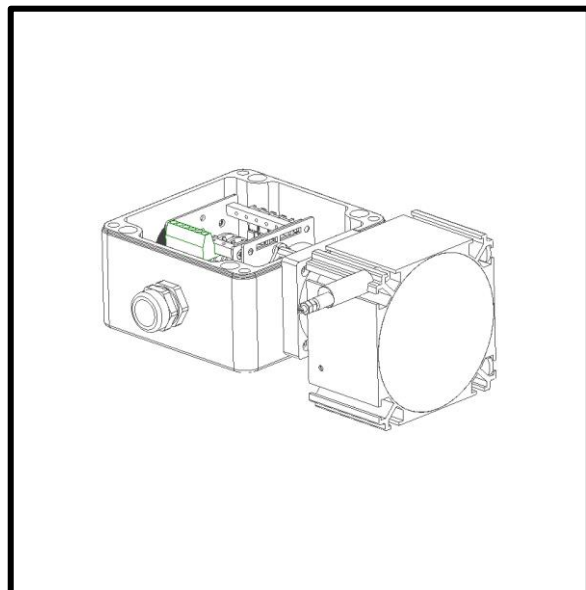
Direction „Up“ Order Code 1



Direction „Left“ Order Code 2



Direction „Right“ Order Code 3



## Series KWGW



### Connection terminal + connection cable

The gear limit switch is supplied with a connection terminal and suitable connection cables and jumpers for the COMs. For pre-wired versions please contact our sales department.

#### KWG120

Up to 3 switches = 6 pole terminal

supplied: connecting cables and jumpers

Pin	1	2	3	4	5	6
Connection	Signal switch 1	Signal switch 2	Signal switch 3	COM switch 1-3	MR265 GND	MR265 4-20mA

Up to 5 switches = 8 pole terminal

supplied: connecting cables and jumpers

Pin	1	2	3	4	5	6	7	8
Connection	Signal switch 1	Signal switch 2	Signal switch 3	Signal switch 4	Signal switch 5	COM switch 1-5	MR265 GND	MR265 4-20mA

#### KWG160

Up to 10 Switches = 2x8 pole terminal

supplied: connecting cables and jumpers

Pin	1	2	3	4	5	6	7	8
Connection	Signal switch 1	Signal switch 2	Signal switch 3	Signal switch 4	Signal switch 5	Signal switch 6	Signal switch 7	Signal switch 8

Pin	9	10	11	12	13	14	15	16
Connection	Signal switch 9	Signal switch 10	COM switch 1-10	N/C	N/C		MR265 GND	MR265 4-20mA
						Pot R1 CCW	Pot R1 CW	Pot R1 COM



**Series KWGW**



**Order code**

927 x. x x. x x x

**Number of Switches**

- 0 3x (Size KWG120)
- 1 4x (Size KWG120)
- 2 5x (Size KWG120) 1\*)
- 3 6x (Size KWG160) 1\*)
- 4 7x (Size KWG160) 1\*)
- 5 8x (Size KWG160) 1\*)
- 6 9x (Size KWG160)
- 7 10x (Size KWG160)

**Analogue Interface / Potentiometer**

- 0 none
- 1 MR 265 current Interface 4-20mA
- 2 Potentiometer 1 Kohm
- 3 Potentiometer 5 Kohm
- 4 Potentiometer 10 Kohm
- 5 Potentiometer 100 Kohm

**Direction String wire**

*For details see page 2*

- 0 KS25B4 changeover contact for cable shoe 2.8x0.55mm silver contact
- 1 KS26B4 changeover contact for cable shoe 2.8x0.55mm gold contact
- 0 KS25B4 changeover contact for cable shoe 2.8x0.55mm silver contact

**Cam profile**

*For details see page 2*

- 0 Single Cam 20° recess (fixed groove)
- 1 Double Cam 180° recess (free adjustable 6-180°)

**String wire length**

- 0 1.5m
- 1 3 m
- 2 5 m
- 3 7,5 m
- 4 10 m
- 5 15 m
- 6 30 m
- 7 40 m
- 8 50 m

**Wire direction**

- 0 Down
- 1 Up
- 2 Left
- 3 Right

1\*) MR265 or Potentiometer option available

## Ordering Info

Examples:

KWG120W-K4-5M-D-0

KWG120W with 4 Channels, 5m Travel, Pull Down, without MR265 Analog Output

KWG120W-K4-5M-D-1

KWG120W with max 4 Channels (KS25B4), 5m Travel, with MR265 Analog Output

**KWG120W** - **K 4** - **5M** - **D** - **0**

### Shaft Option

**KWG120W** Size 120mm, For 1-5 Channels  
**KWG160W** Size 160mm, For 6-10 Channels

### No. of Switches (Channels)

**K2 to K5** For Size KWG120, Standard KS25B4 switches Only  
**K6 to K10** For Size KWG160, Standard KS25B4 switches Only  
**K2 to K4** For Size KWG120, Standard KS25B4 switches with MR265  
**K5 to K8** For Size KWG160, Standard KS25B4 switches with MR265

**L2 to L3** For Size KWG120, Standard S840 V20 microswitches Only  
**L4 to L5** For Size KWG160, Standard S840 V20 microswitches Only  
**L2** For Size KWG120, Standard S840 V20 microswitches with MR265  
**L3 to L4** For Size KWG160, Standard S840 V20 microswitches with MR265

### Draw Wire Travel Length (in meters)

1.5M, 3M  
**5M**, 7.5M, 10M, 15M  
 30M, 40M, 40M, 50M

**Bold ratios are standard, quick ship configurations**

### Pull Direction (facing Draw Wire Module)

**D** Down  
**U** Up  
**L** Left  
**R** Right

### Position Transducer Output Option

**0** None  
**1** MR265 2-Wire 4-20mA loop-powered transducer output

### Replacement Parts

**6099.07.778** PSN (black) Cam Programming Key for NK Single and Double Cams  
**6099.00.035** Type K Switch, KS25B4 changeover switch with silver contacts  
**6099.22.846** Type L Switch, S840 V20 changeover switch with silver contacts