



## Wire draw encoders HighLine

PRF13-C1AM1020



**Model Name** > PRF13-C1AM1020  
**Part No.** > 1034331



*Illustration may differ*

**At a glance**

- Incremental wire draw encoders
- Modular measuring system with a wide selection of interfaces/measuring lengths
- Measuring lengths: 2 m ... 50 m
- Very rugged system (dirt wiper, integrated brushes), highly shock and vibration resistant
- High-quality winding mechanism and wire input
- Interfaces: - TTL/HTL
- High enclosure rating
- Highly resistant to shock and vibrations

**Your benefits**

- Reliable solution in harsh environments
- Long service life due to rugged industrial housing
- Quick and easy installation without the need for precise linear guidance
- Low integration and maintenance costs
- Customization option reduces inventory costs



**Performance**

|                                    |                         |
|------------------------------------|-------------------------|
| Measurement range:                 | 0 m ... 10 m            |
| Repeatability:                     | ≤ 1.5 mm <sup>1)</sup>  |
| Linearity:                         | ≤ ± 2 mm <sup>2)</sup>  |
| Hysteresis:                        | ≤ 3 mm <sup>3)</sup>    |
| Resolution (wire draw + encoder):: | 0.2 mm <sup>4) 5)</sup> |

1) 3) Value refers to wire draw mechanism 2) 4) 5)

**Mechanical data**

|                                        |                                                           |
|----------------------------------------|-----------------------------------------------------------|
| Mass (including encoder):              | 3.8 kg                                                    |
| Measuring wire diameter:               | 1.35 mm                                                   |
| Measuring wire material:               | Highly flexible stranded steel 1.4401 stainless steel V4A |
| Housing material, wire draw mechanism: | Aluminum (anodised), plastic                              |
| Spring return force:                   | 15 N ... 20 N <sup>1)</sup>                               |
| Life of wire draw mechanism:           | 1 million cycles <sup>2)</sup>                            |
| Actual length of cable extension:      | 10.2 m                                                    |
| Wire acceleration:                     | 40 m/s <sup>2</sup>                                       |
| Operating speed:                       | 4 m/s                                                     |

|                                           |                        |
|-------------------------------------------|------------------------|
| Mounted encoder:                          | DFS60                  |
| Mounted mechanic:                         | MRA-F130-110D2         |
| Part number mechanic:                     | 6028627                |
| Part number encoder:                      | -                      |
| Mass (measuring wire):                    | 7.1 g/m                |
| Length of wire pulled out per revolution: | 334.1 mm <sup>3)</sup> |
| Pulses per revolution:                    | 1,670 <sup>4)</sup>    |

1) These values were measured at an ambient temperature of 25 °C. There may be variations at other temperatures. <sup>2) 3) 4)</sup>

### Electrical data

|                                         |                                                                    |
|-----------------------------------------|--------------------------------------------------------------------|
| Maximum output frequency:               | 600 kHz                                                            |
| Reference signal, position:             | Electronically, gated with A and B                                 |
| Reference signal, number:               | 1, electronically, gated with A and B                              |
| Maximum load current:                   | 30 mA                                                              |
| Initialization time::                   | ≤ 32 ms, with mechanical zero pulse width ≤ 30 ms <sup>1) 2)</sup> |
| Supply voltage:                         | 4.5 V ... 32 V                                                     |
| Power consumption:                      | 0.7 W                                                              |
| MTTFd: mean time to dangerous failure:: | 300 a <sup>3) 4)</sup>                                             |

1) 2) Valid positional data can be read once this time has elapsed. <sup>3)</sup> This product is a standard product and does not constitute a

safety component as defined in the Machinery Directive.

Calculation based on nominal load of components, average ambient

temperature 40°C, frequency of use 8760 h/a. All

electronic failures are considered hazardous. For more information, see document no. 8015532. <sup>4)</sup> The value applies to the mounted encoder

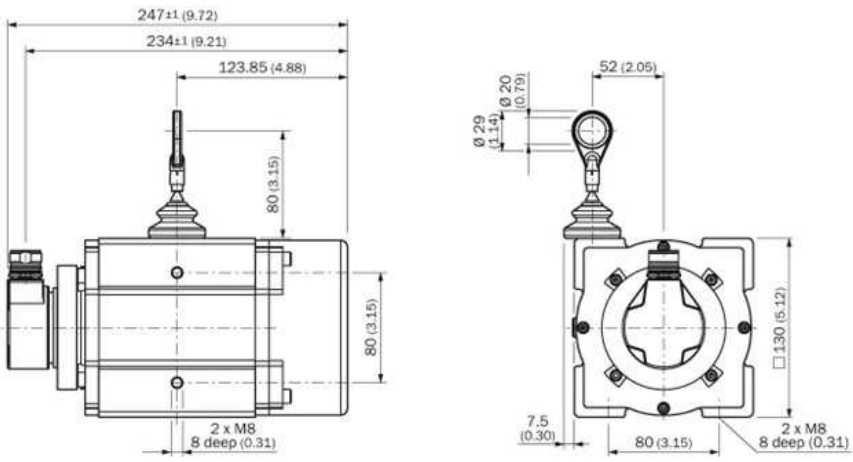
### Interfaces

|                       |                               |
|-----------------------|-------------------------------|
| Electrical interface: | 10 V ... 32 V, TTL/Push pull  |
| Connection type:      | Connector M23, 12-pin, radial |
| Encoder:              | Incremental encoders          |

### Ambient data

|                                          |                                                                                                                                  |
|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| EMC:                                     | (according to EN 61000-6-2 and EN 61000-6-3)                                                                                     |
| Enclosure rating encoder:                | IP 67                                                                                                                            |
| Enclosure rating mechanic:               | IP 64                                                                                                                            |
| Resistance to shocks:                    | 60 g, 6 ms (according to EN 60068-2-27)                                                                                          |
| Resistance to vibration:                 | 20 g, 10 Hz ... 2,000 Hz (according to EN 60068-2-6)                                                                             |
| Relative humidity/Condensation:          | 90 % (condensation of the optical scanning not permitted)                                                                        |
| Working temperature range (encoder):     | -30 °C ... +70 °C                                                                                                                |
| Working temperature range (mechanics):   | -30 °C ... +70 °C                                                                                                                |
| Working temperature range (combination): | Wird definiert durch den höheren minimalen und niedrigeren maximalen Wert des Arbeitstemperaturbereichs von Encoder und Mechanik |

# Dimensional drawing



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