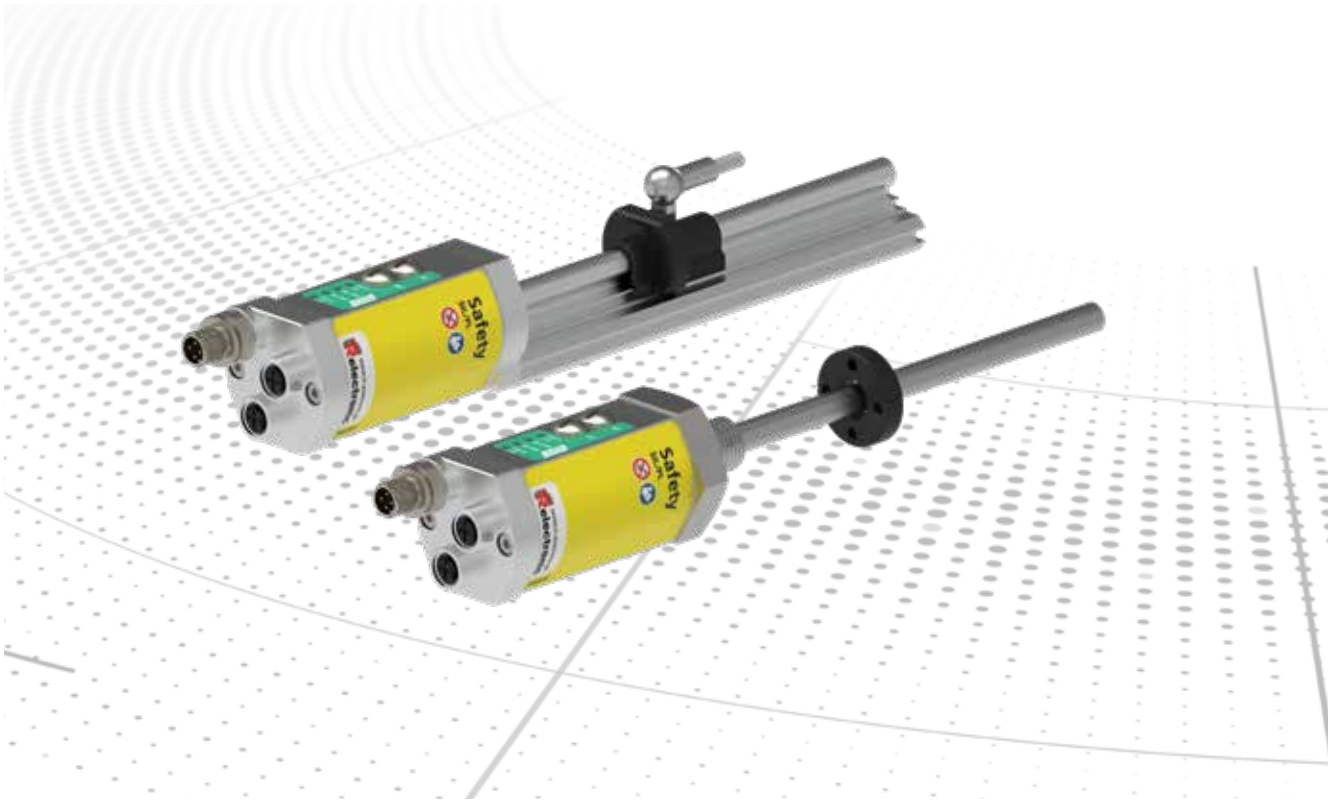
Linear Encoders Magnetostriction
Functional Safety

SIL2/3
Functional Safety
PLd/e



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Linear Encoders with Functional Safety
LM_I46+FS



Uncompromising Safety for Linear Motion – SIL 3 Linear Encoders

LM_I46+FS is aa fully certified linear measurement system that meets the stringent requirements of SIL 3 and PLe (as well as SIL 2/PLd). With this, TR Electronic closes the gap in applications where linear motion must be monitored directly and with absolute safety. The system is based on highly reliable, redundant sensing, in which two independent measurement systems are housed in a single tube or profile in a protected manner.

Truly absolute, non-contact, and wear-free

This new development combines maximum safety with the proven mechanical advantages of TR Electronic's linear measurement systems. Scanning is truly absolute, non-contact, and completely wear-free.

The system is available to users in either a tube or profile configuration and provides position data with a resolution of 0.01 mm.

Safety Highlights:

_ SIL3/PLe and SIL2/PLd
_ Two completely independent detection systems in a single tube (2-in-1)
_ Compliant with the Cyber Resilience Act (CRA) and the new Machinery Regulation (MVO 2027)

General product features

_ Detection: Non-contact, wear-free, truly absolute, and with no system-imposed speed limit

Connectivity & Protocols:

_ Interface: PROFIsafe via PROFINET
_ Network-Features: Fast Start-Up (FSU), Media Redundancy (MRP)
_ Profile & Security: PNO Encoder-Profile (KL 3/4) and Profinet Security Class 1, System-Redundancy S2

SIL3, PLe / SIL2, PLd

Product	LMPI46+FS	LMRI46+FS
		
Mechanic execution	(P) Profil	(R) Rohr
Measurement Length	50…4000 mm, in Stufen	50…4000 mm, in Stufen
Size	46	46
Supply voltage	24 VDC, -20…+10 %*	24 VDC, -20…+10 %*
Resolution	0,01 mm	0,01mm
Linearity defect	typisch ±30 µm ±0,05 mm < 1000 mm ±0,1 mm >= 1000…1500 mm ±0,15 mm > 1500 mm	typisch ±30 µm ±0,05 mm < 1000 mm ±0,1 mm >= 1000…1500 mm ±0,15 mm > 1500 mm
Reproducibility	0,005 mm	0,005 mm
Hysteresis	typisch < 10 µm < 0,02 mm < 1000 mm < 0,1 mm >= 1000…1500 mm < 0,15 mm > 1500 mm	typisch < 10 µm < 0,02 mm < 1000 mm < 0,1 mm >= 1000…1500 mm < 0,15 mm > 1500 mm
Temperature coefficient	< 8µm/°C <= 500 mm < 15 ppm/°C > 500 mm *	< 8 µm/°C <= 500 mm < 15 ppm/°C > 500 mm *
Ambient temperature	0…+70 °C	0…+70 °C
Protection class	IP65	IP65
Functional Safety	SIL3, PLe / SIL2, PLd	SIL3, PLe / SIL2, PLd
Protection class	beliebig	beliebig
Material	Aluminium Strangpressprofil	Hüllrohr Edelstahl
Interfaces	PROFINET PROFIsafe	PROFINET PROFIsafe
Weblink	https://www.tr-electronic.com/s/S027225	https://www.tr-electronic.com/s/S027224
QR-Code		

*Please ask for availability of specific combinations

Can't find the right variant? Please contact us (info@tr-electronic.de)

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