SIL 3 certified Pulse Frequency Conditioner ProLine P16000

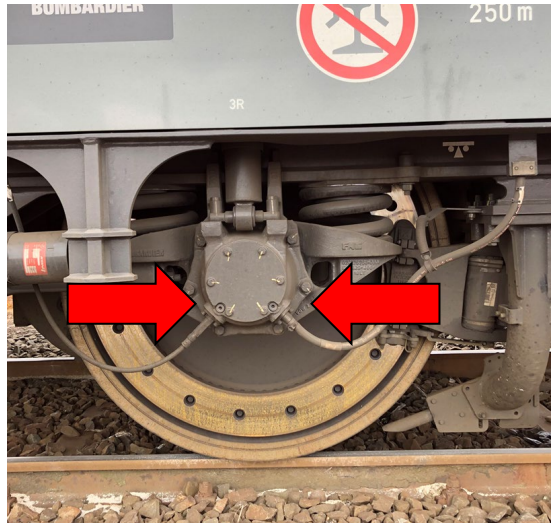
Presentation

P16000 Pulse Frequency Conditioner

Product Idea

In particular on rail vehicles, but also often in industry, a speed or rotational speed signal is required from controls in different systems.

The number of sensors can be reduced if signals are electronically "doubled" and can thus be used for additional tasks. This reduces costs or makes retrofitting possible in the first place.



P16000 Pulse Frequency Conditioner

Highlights

- **SIL 3 certified** for decoupling signals from safety-related measuring circuits or for decoupling (safety-related) systems.
  Note: Signal conversion by P16000 is not SIL certified.

- With the wide **frequency input range up to 20 kHz**, it can be used particularly well where there is a lack of sufficiently fast pulse / counter inputs on controls.

- **High transmission accuracy** even under harsh RFI conditions.

- **Certified robustness** for operation on rail vehicles and harsh environments: Meets all relevant rail and industry standards.

P16000 Pulse Frequency Conditioner

Highlights

- **Safe isolation** between input and output and power supply, with UL listing: For easy integration and flawless measurement performance.
- **Easy system integration** through compatibility with a wide variety of sensor configurations and different output signals.
- **Safe and easy installation** thanks to plug-in push-in terminals.

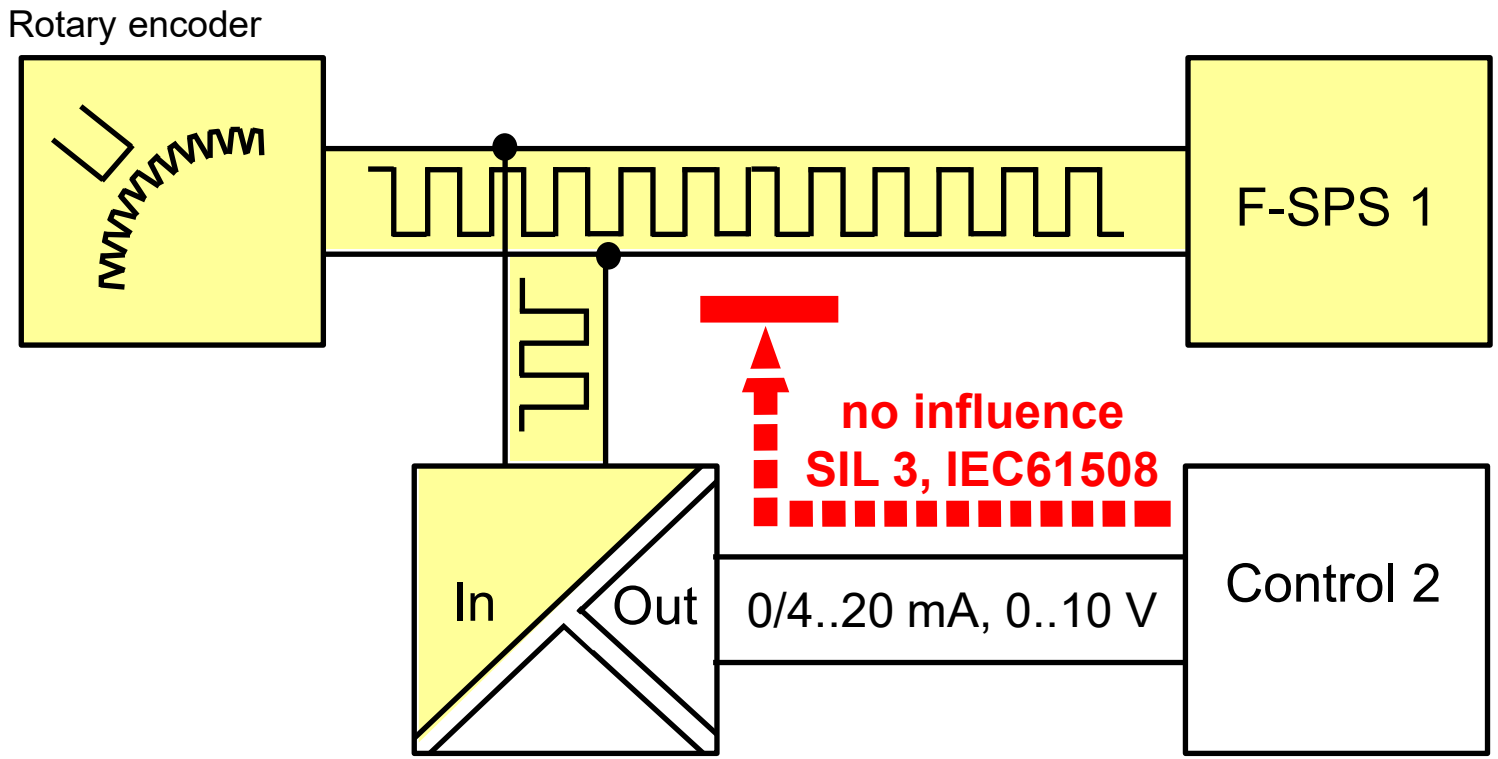
P16000 Key Features

- Conversion of the pulse frequency signals from speed sensors / rotary encoders into a potential-free standard signal.
- The standard signal can easily be processed by controls. Pulse counter inputs are not required.
- Due to the galvanic separation, several systems connected to the same speed sensor are decoupled by P16000 from one another and do not interfere with one another.
- Reducing the number of speed sensors reduces costs for their procurement, installation and cabling.
- Retrofitting of systems is possible with justifiable effort due to the doubling of signals, while the subsequent installation of rotary encoders is often difficult to impossible or very complex.

P16000 Decoupling of safety-related circuits / Decoupling of systems

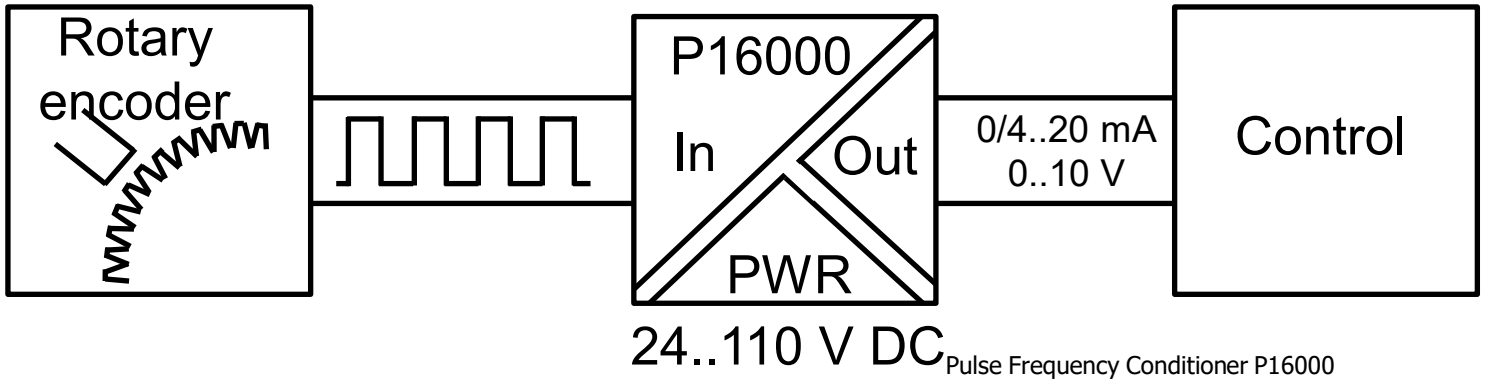
Unique Feature

Signals from safety-relevant signal circuits can be decoupled or doubled without adversely affecting the safety function.



P16000 Applications

- Standstill detection (machines, door control of railways)
- Speed indicator
- Speed control / rotation speed control
- Signal for train controls where speed information (without detection of the direction of travel) is required.
- Speed control of electric, dieselelectric and hydroelectric drives
- Flow measurement



P16000 Certificates

Rail vehicles and Industry

Certification	Standard	Accredited laboratory
Railway applications Rolling stock – Electronic equipment	EN 50155	yes
Vibration/shock in railway applications	EN 61373 / IEC 61373	yes
EMC Railway and industrial applications	EN 50121	yes
	EN 61326	yes
Isolation requirements for railways and industry	EN 50124	yes
	EN/UL61010	yes (UL)
Fire safety for rail vehicles	HL3 according EN 45545-2	yes
Functional Safety (no influence on circuits connected to P16000 input)	SIL 3 according EN 61508	yes

P16000 Advantages and Benefits

Feature	Advantage	Benefit
SIL 3: Freedom from interference	Signals from safety-relevant signal circuits can be decoupled or doubled without the safety function being excessively impaired.	Extended use and reduced costs.
Replaces speed sensor / rotary encoder	Reduces the effort for procurement, installation and cabling of a speed sensor / rotary encoder.	Less effort / lower costs
Allows retrofitting of controls with a need for speed / rotation speed measurement	Electronic signal duplication -> mechanics (e.g. axle cover of a rail vehicle axle) do not have to be adjusted. Permissible axle weight is not increased.	Feasibility is achieved. Less effort / lower costs compared to retrofitting speed sensors.
Avoids the use of multi-channel (e.g. 4-channel) sensors that tend to be susceptible	Decreases the expected failure rate.	Increased availability of the signal / control / rail vehicle / machine.

P16000 Advantages and Benefits

Feature	Advantage	Benefit
Frequency measuring range sufficient for many applications	Product “fits" for 90% of the applications.	Product can be used.
High accuracy even under the influence of temperature and EMC	Product measures precisely even under real conditions.	Product allows precise control / good system performance.
Integrated DC broad-range power supply	Can be supplied directly from a 24 to 110 V DC back-up network	No need for a DC / DC converter with> 24 V back-up
Rail suitability proven by independent test laboratories	The product can be used by the user in the strictly regulated railway sector without further testing.	System design is quick / effortless.
Industrial suitability proven by independent test laboratories	The product can be used by the user without further testing.	System design is quick / effortless.

Thanks for your attention!

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