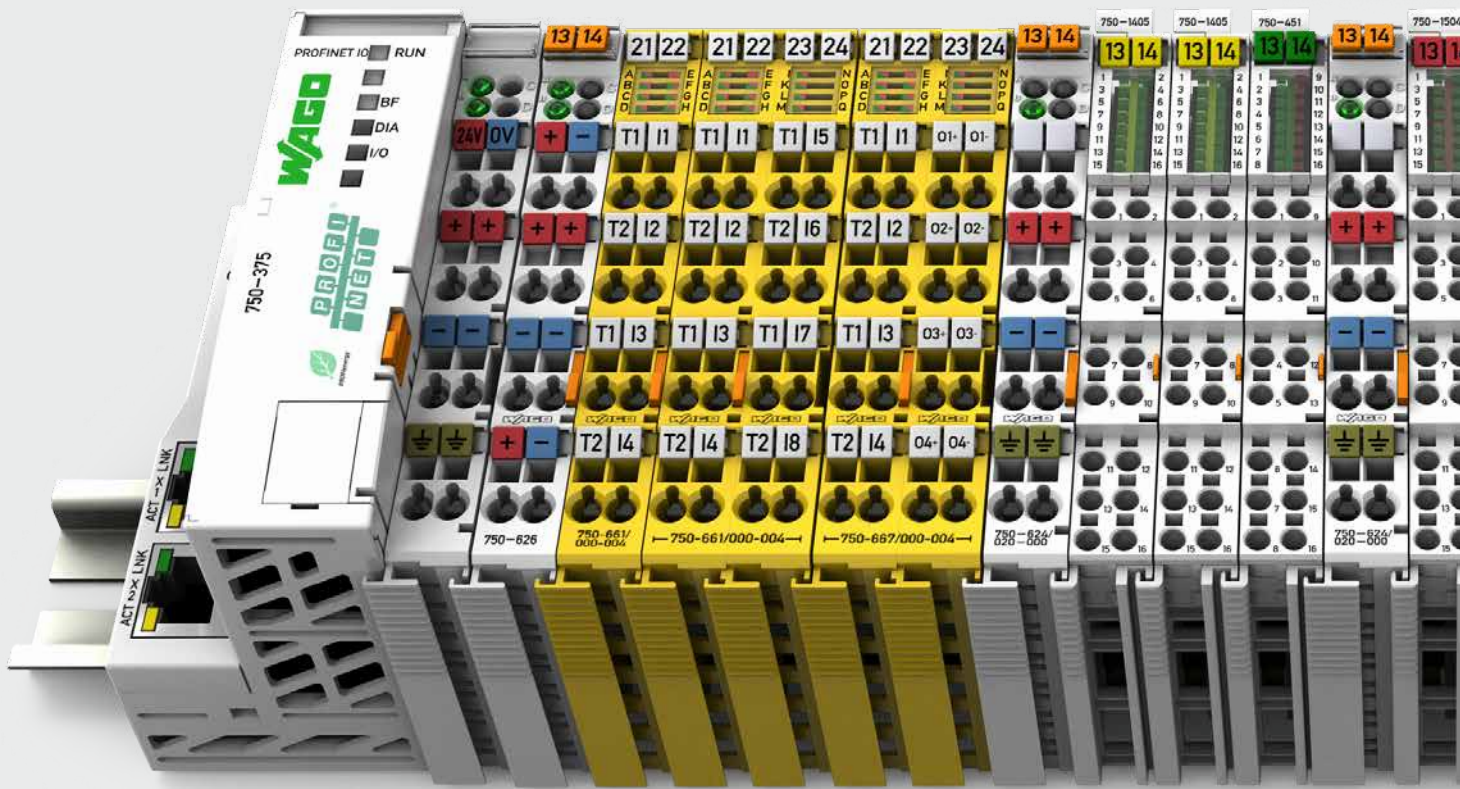




WAGO I/O System 750

Functional Safety with the New WAGO Safety I/O Generation





WAGO I/O System 750

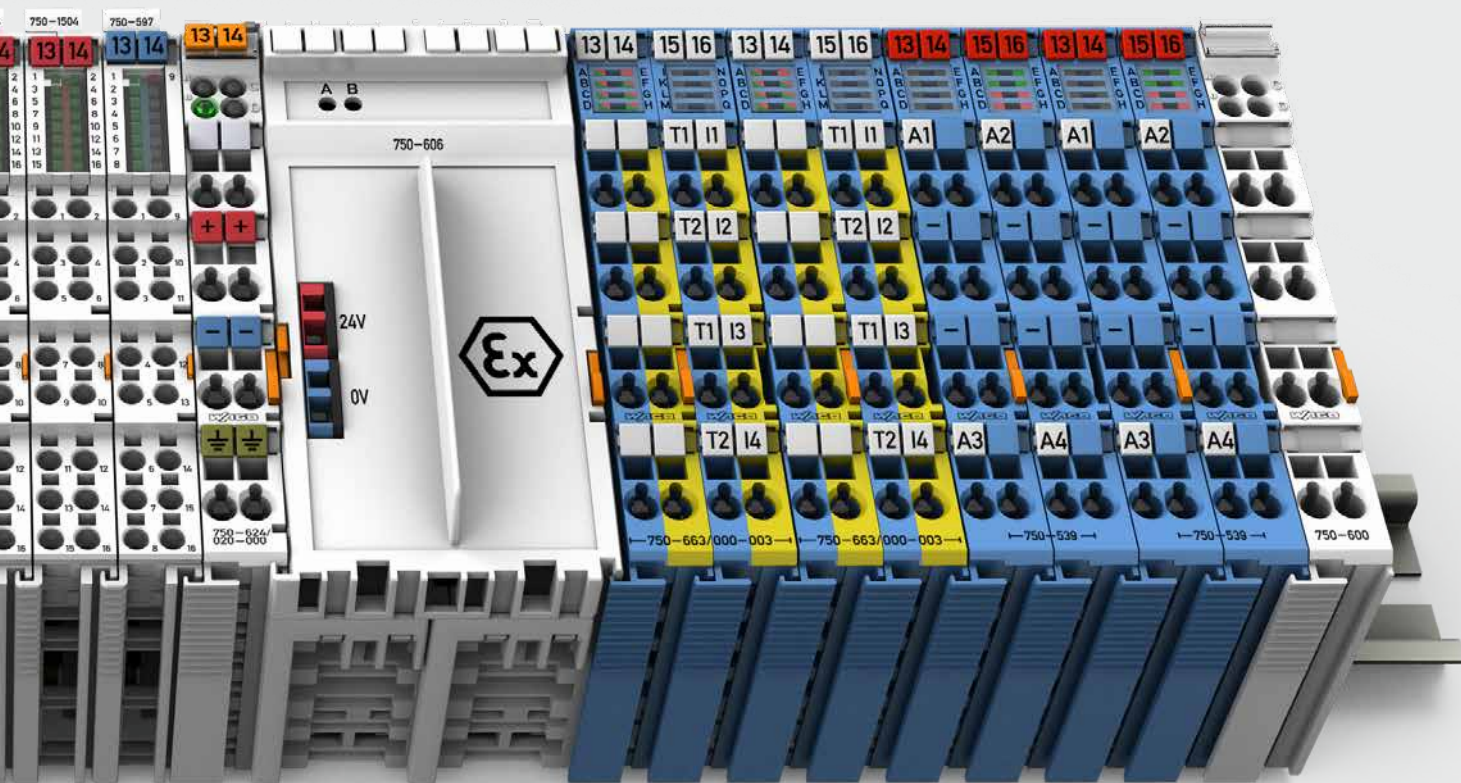
Functional Safety for Control Cabinets

The WAGO I/O System 750 boasts universal use and an extensive product portfolio. With more than 500 different modules, it offers superior versatility and flexibility. WAGO also provides a wide range of products for functional safety applications with analog and digital signals.

With their compact design, the functionally safe modules of the WAGO I/O System 750 don't take up much space and offer a high signal density in a small footprint. The system's modularity allows flexible combination of standard, Ex i and PROFIsafe components. The color coding clearly identifies the different technologies.

The PROFIsafe modules offer simple diagnostic and service options. The system uses standard diagnostics according to the PROFIBUS® and PROFINET® specifica-

tions. With iPar server technology, device replacement is easy and requires no tooling. The modules can also be parameterized through the WAGO Safety Editor (SEDI). They support safety functions up to SIL 3 and PLe/Cat. 4 and meet the EN IEC 13849 and EN ISO 62061 safety standards. The modules can also be used in safety applications for the process industry per IEC 61511.



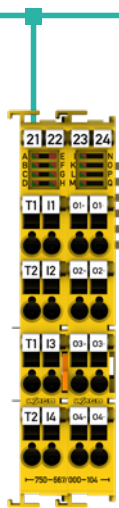
The Benefits for You:

- High signal density in a small footprint
- Easy diagnostics and service options
- Simple device replacement via iPar Server technology
- Suitable for safety functions up to SIL 3 and PLe/ Cat. 4



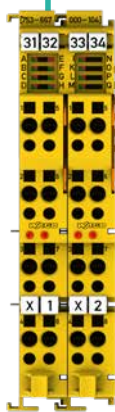


PROFIsafe
PROFINET®



**Input and Output
Module with Logic**

4FDI/4FDO 24 V 2 A Logic PROFIsafe
750-667/000-104



**Input and Output
Module with Logic**

4FDI/4FDO 24 V 2 A Logic PROFIsafe
753-667/000-104



**Input and Output
Module with Logic**

4FDI/2FDO 24 V 10 A Logic PROFIsafe
750-666/000-104



Input Module

4FDI 24 V PROFIsafe
750-661/000-004



Input Module

8FDI 24 V PROFIsafe
750-662/000-004



**Input and Output
Module**

4FDI/4FDO 24 V/2 A PROFIsafe
750-667/000-004



**Input and Output
Module**

4FDI/2FDO 24 V/10 A PROFIsafe
750-666/000-004

Functional Safety

WAGO I/O System 750 with PROFIsafe



Parameterizable Functions

Digital Inputs

- Input filter time
- Signal preprocessing
 - Valence/antivalence
 - Discrepancy time
 - Restart inhibit
 - Operating mode selector switch

Digital Outputs

- Test pulse length
 - Dark/light test
- Line break detection
- Active discharge

Analog Inputs

- Internal/external/automatic acknowledgment
- Passivation for each channel/module
- Analog value formats (e.g., RIOforPA)
- Sampling frequency
- Line break detection
- Mean calculation
- Substitute value

Safety Logic

- Implementation of safe applications on non-safe controllers (e.g., E-stop, EDM, two-hand control)
- Shorter safety response time
- Parameterization via Safety Editor (SEDI)

Extensive Diagnostics

LED Display

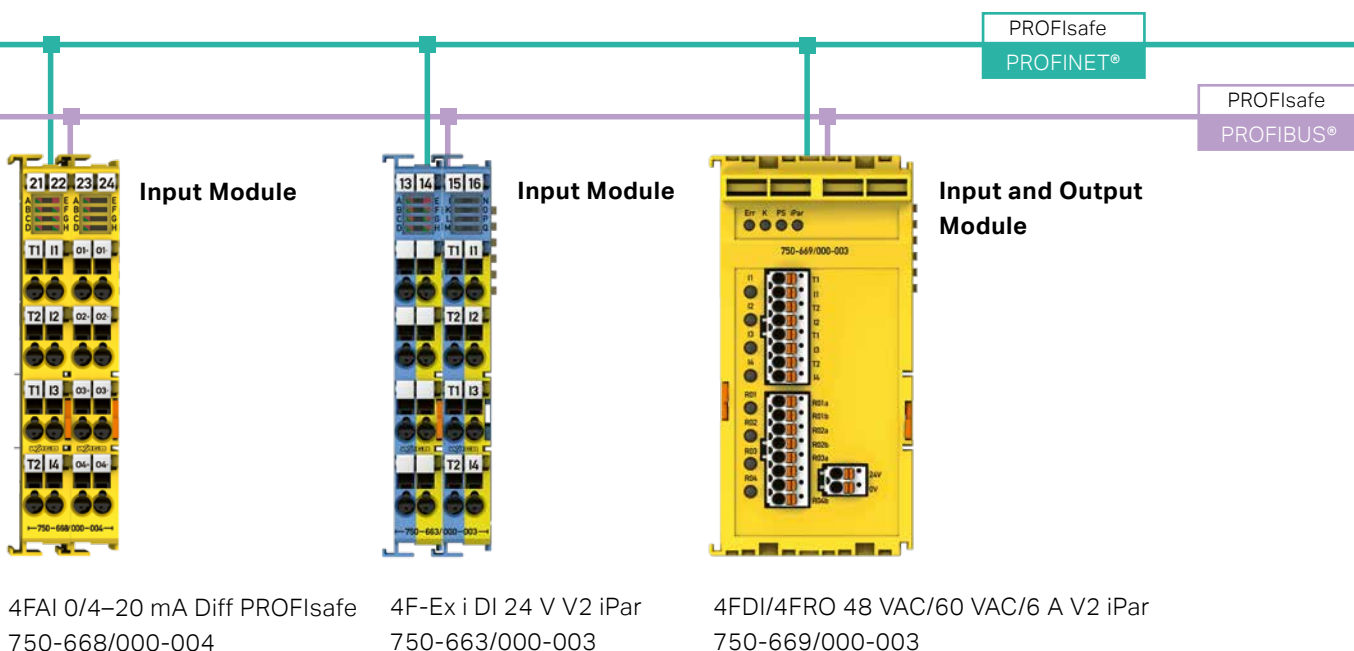
- Status for each channel
- Active diagnostics
- PROFIsafe status
- Parameterization status

Fieldbus

- Standard PROFIBUS® and PROFINET® diagnostics
- Undervoltage
- Overload
- Short circuit – external voltage/GND
- Temperature
- Line break
- Measurement range error
- Parameterization error
- Signal preprocessing

4th Generation Behavior in the Event of an Error

- Module error – module passivation
- Channel error – channel-by-channel passivation





Implement Safety Applications Without a Safety Controller

New Safety Modules Can Be Operated with WAGO Controllers

WAGO's new safety modules now enable users to implement safety applications, such as two-hand control or door locking, without the need for a separate safety controller. The logic modules can be used downstream of WAGO controllers and couplers, resulting in faster reaction times at the lowest field level, because communication via the fieldbus is eliminated.

The safety logic is configured using the new WAGO Safety Editor. Thanks to the logic modules, it is now possible to implement a machine, including a safety application, with WAGO controllers like the WAGO PFC.

Another advantage is that the module can also be integrated downstream of a safety controller using PROFIsafe. This allows for shorter safety response times and facilitates the creation of more compact safety solutions.

The Benefits for You:

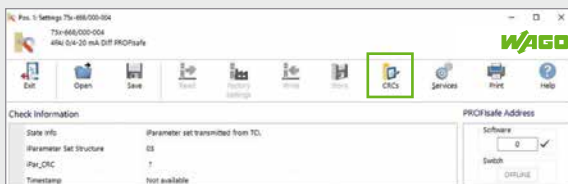
- Cost-effective solution for safety applications
- Can be used without a safety controller
- Shorter safety response times, since the logic is executed right in the module

Engineering System (ES)

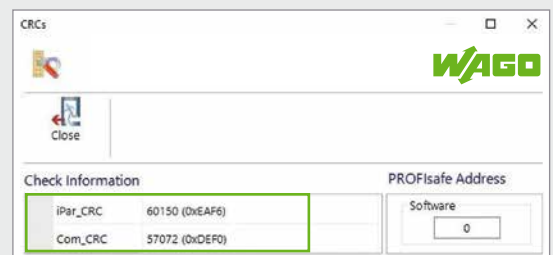


TCI Activation

Transfer Checksums



Calculate
Checksums



Offline Parameterization via GSD in PROFINET®

Offline parameterization allows you to parameterize your safety modules in PROFINET® using the device description. This makes it easy to create your safety application offline and duplicate it on similar machines.

When the application restarts, the offline parameters automatically transfer to the modules, so devices can be replaced at any time, even without tooling.





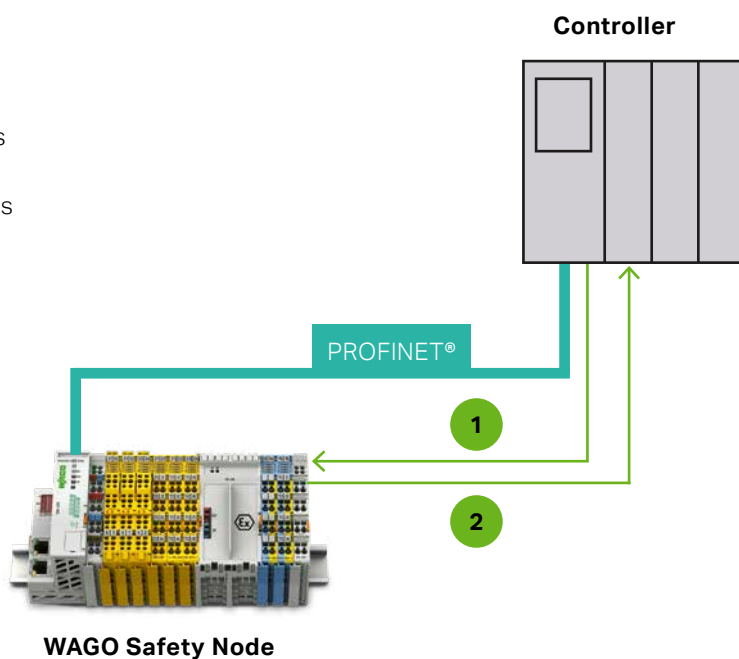
Functional Safety

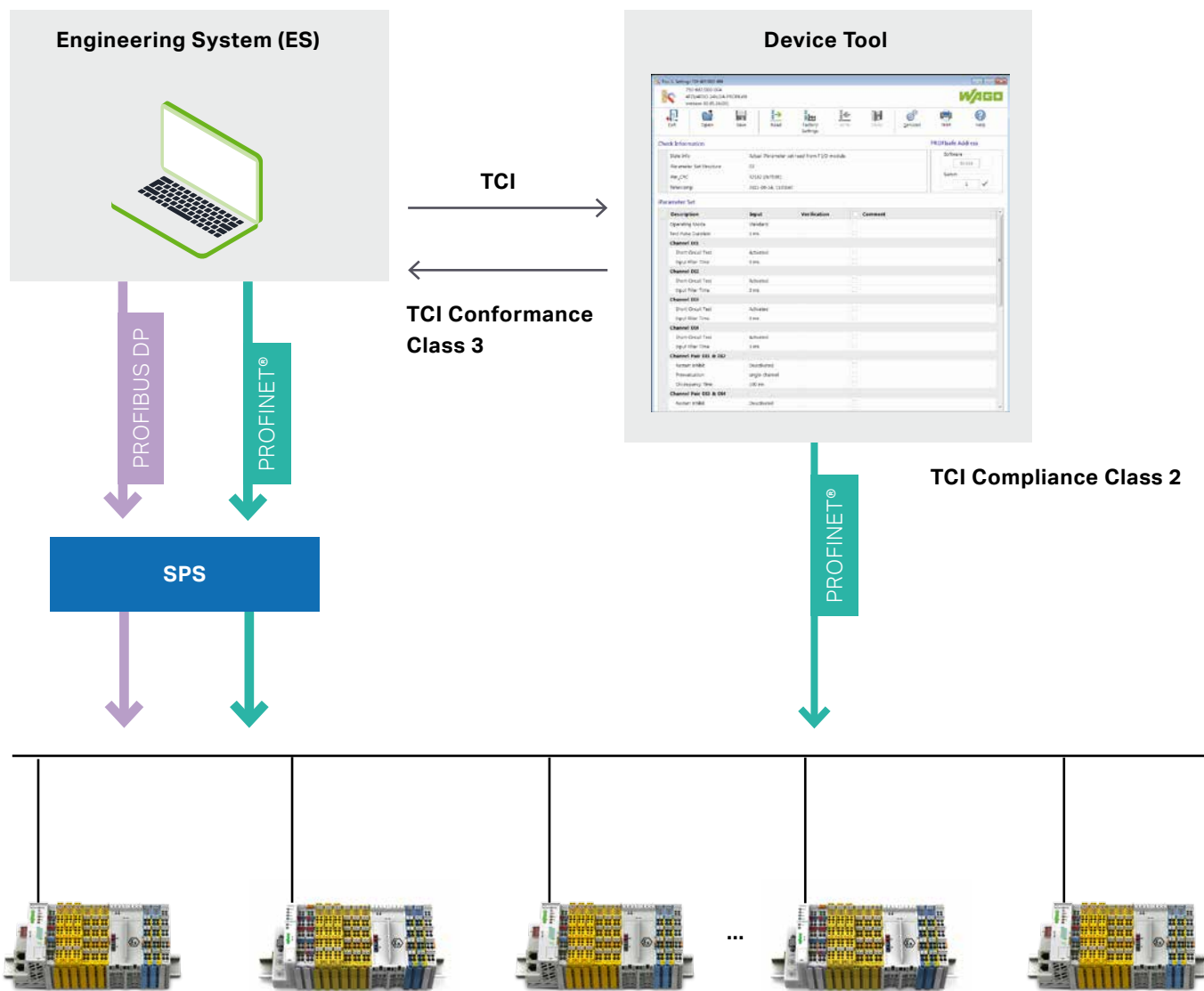
Easy Integration

iPar Server Technology Support – Module Replacement without Tooling

1. iParameter Download: Restores module parameters during replacement or initial commissioning.
2. iParameter Upload: Stores and backs up parameters within the application program.

The module's iPar CRC (Cyclic Redundancy Check) ensures parameter protection.





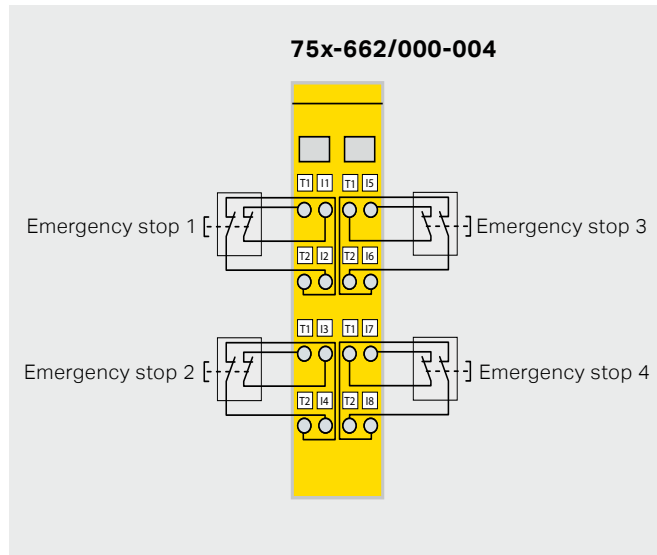
Easy Parameterization Using the Tool Calling Interface (TCI)

The Tool Calling Interface (TCI) is a standard interface developed by the PROFIBUS® and PROFINET® user organizations. It provides direct access to the product parameterization from the engineering system. TCI also allows an existing control system's communication structures to be used.

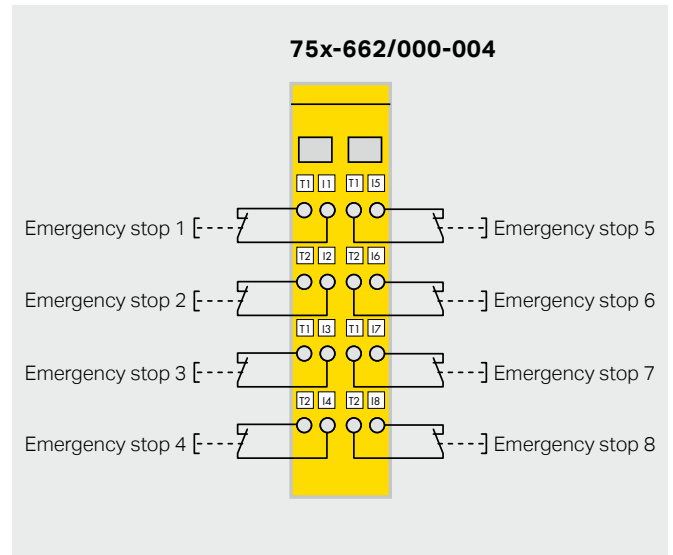
Functional Safety

Application Examples

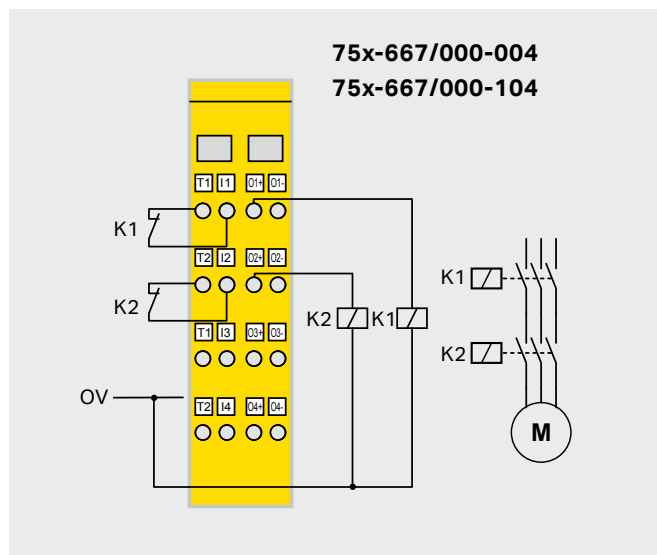
Four Emergency Stops, 2-Channel, SIL CL 3, PL e, Cat. 4



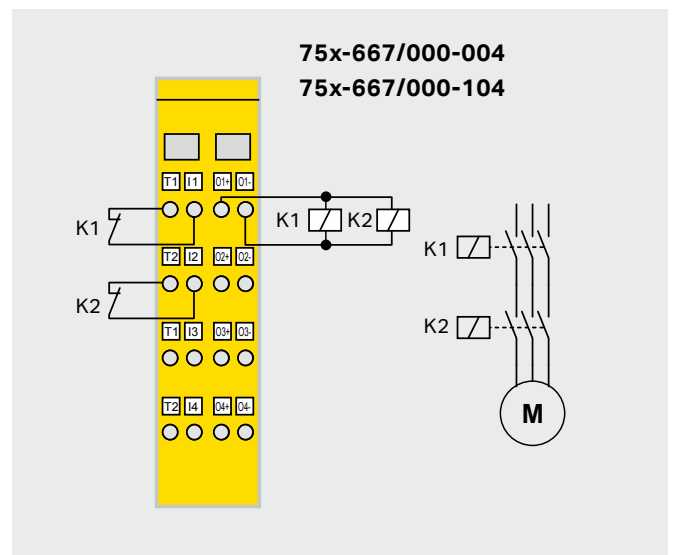
Eight Emergency Stops, 1-Channel, SIL CL 2, PL d, Cat. 2



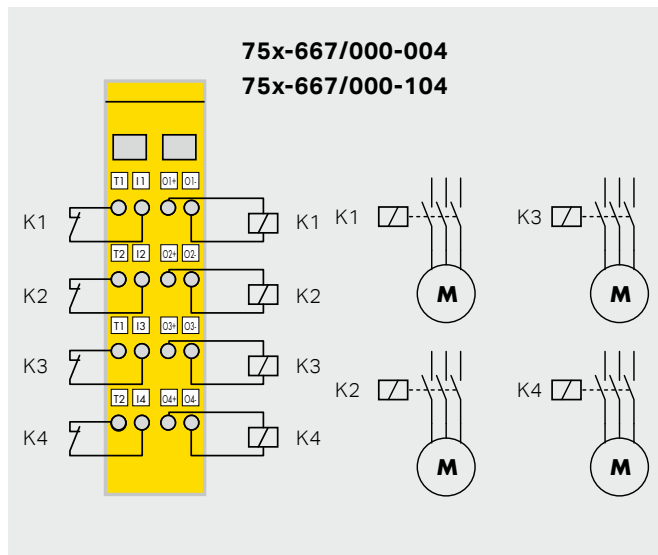
Out1+/Out2+ Loads Connected to 0 V (Ground), SIL CL 3, PL e Cat. 4



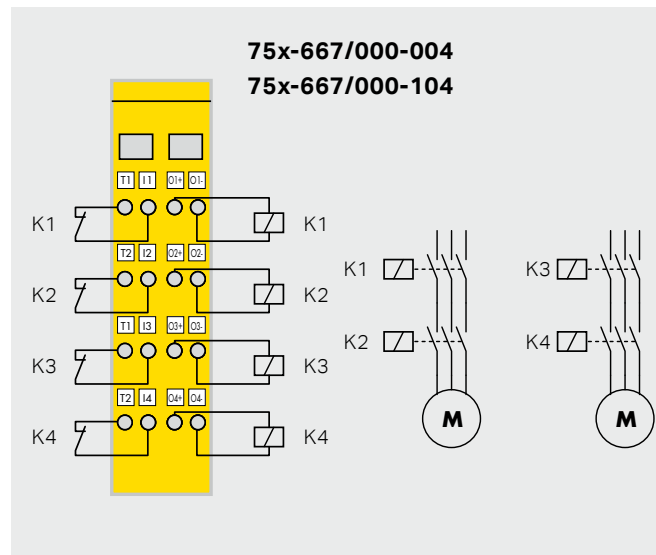
Two Parallel Loads Connected to One Digital Power Output, SIL CL 3, PL e, Cat. 4



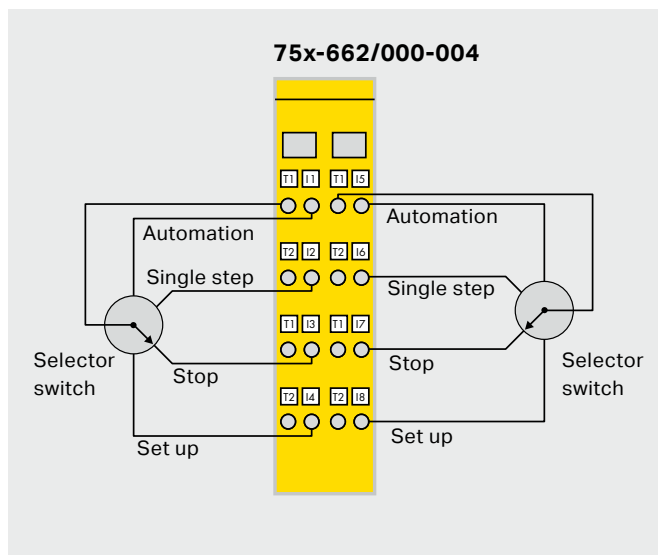
**Four Motors, 1-Channel, with Feedback,
SIL CL 2, PL d, Cat. 2**



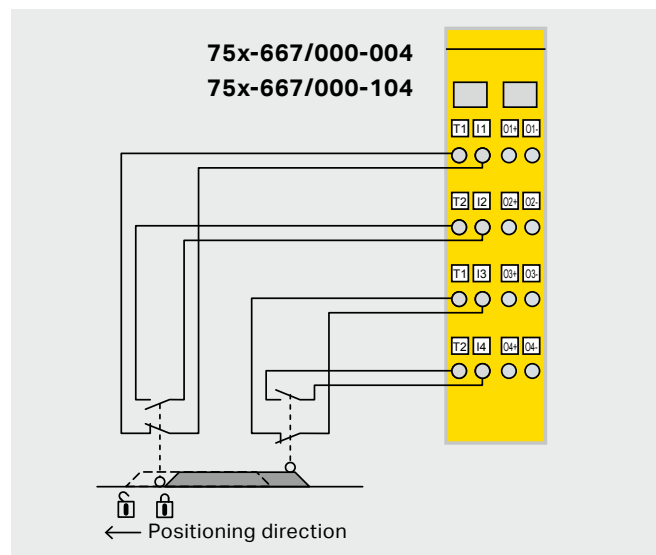
**Two Motors, 2-Channel, with Feedback,
SIL CL 3, PL e Cat. 4**



Two 4-Way Selector Switches, SIL CL 3, PL e, Cat. 4



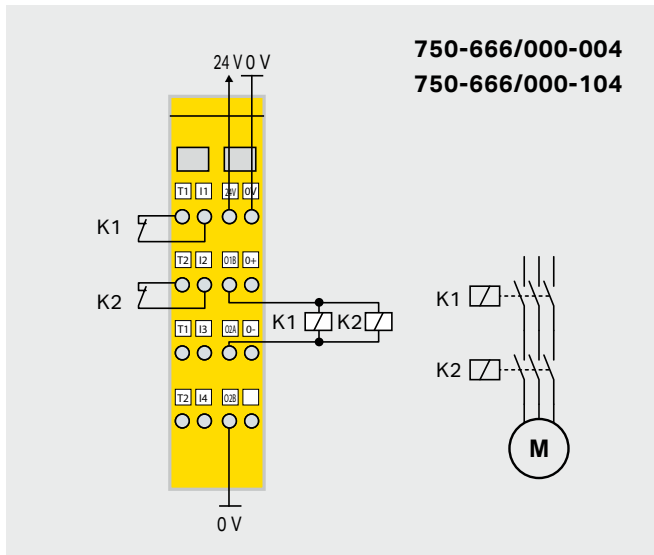
Protective Door Monitoring, SIL CL 3, PL e, Cat. 4



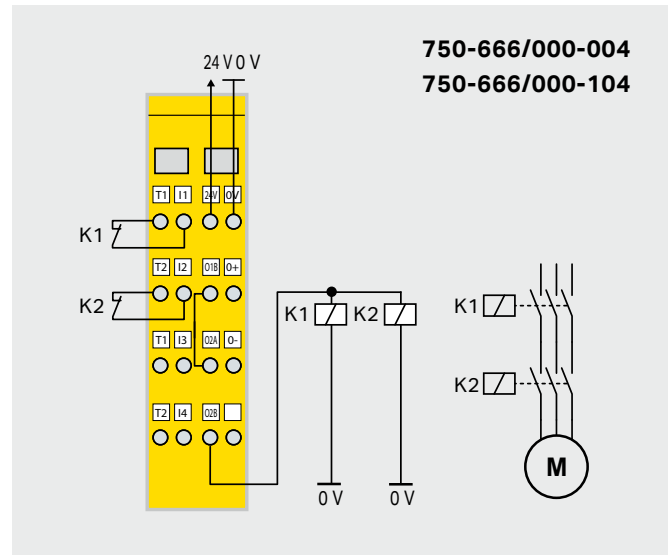
Functional Safety

Application Examples

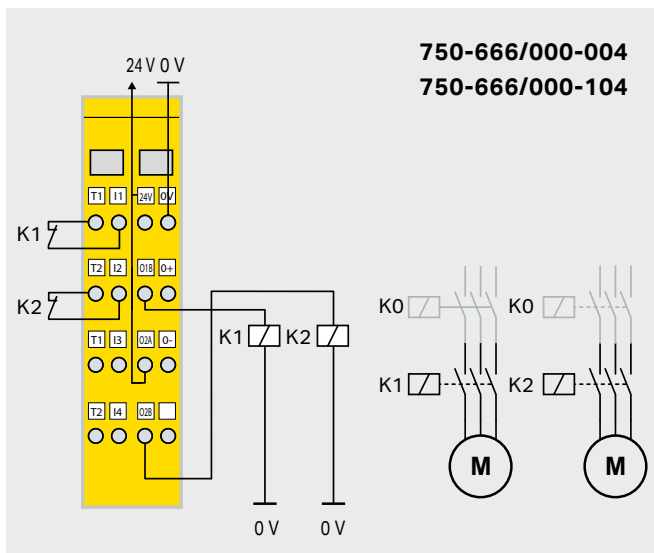
Connection of One Motor, "H-Side/L-Side 1" Output Configuration



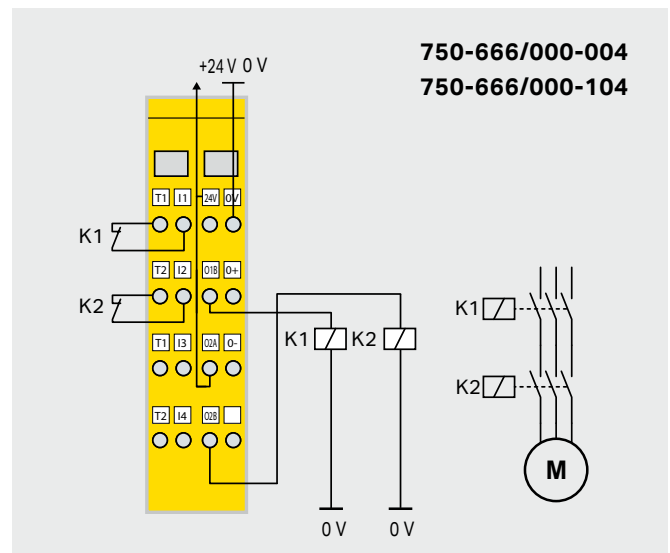
Connection of One Motor, "H-Side/L-Side 1" Output Configuration, 2-Channel



Connection of Two Motors, "H-Side/L-Side 2" Output Configuration, 1-Channel



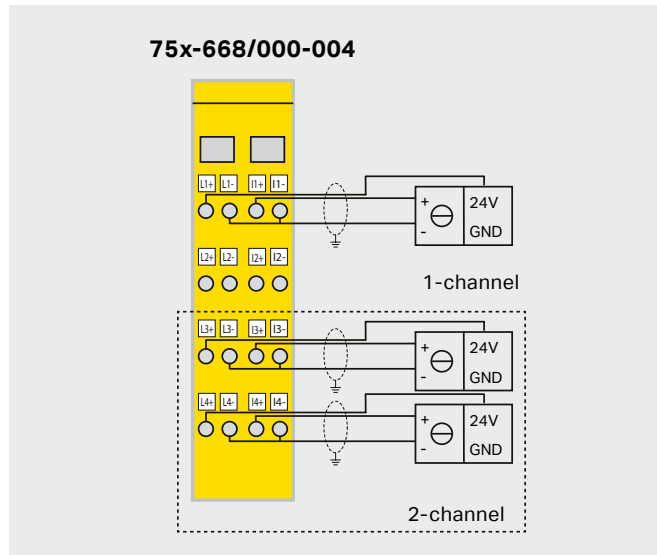
Connection of One Motor, "H-Side/L-Side 2" Output Configuration, 2-Channel



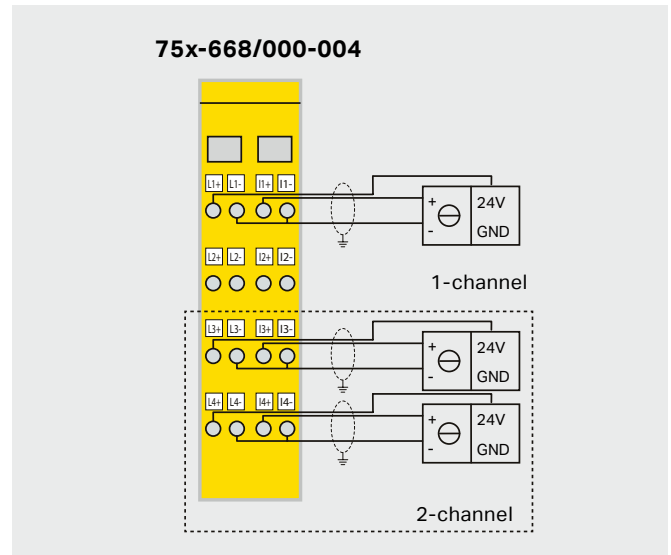
Functional Safety

Application Examples

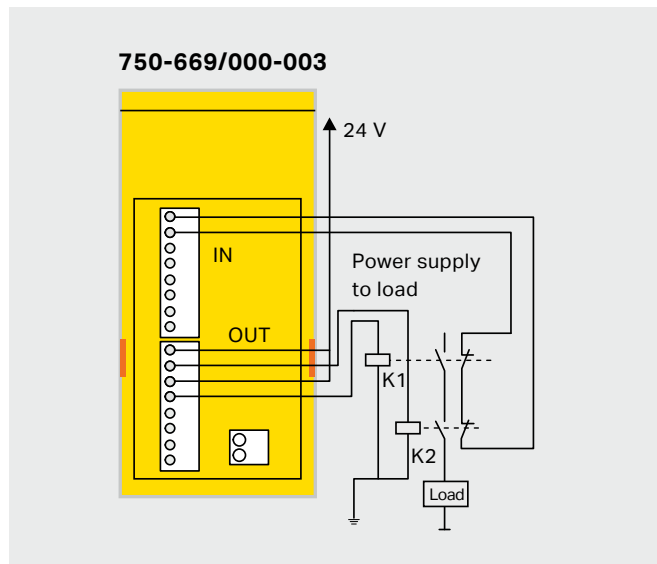
3-Wire Connection, 1-Channel/2-Channel



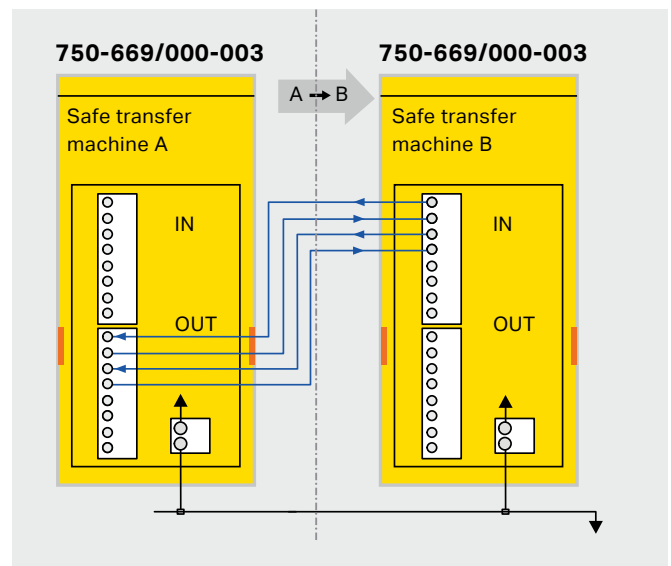
4-Wire Connection, 1-Channel/2-Channel



Switching Large Contactors, SIL CL 3, PL e Cat. 4



Sequencing of Safety Areas with Galvanic Isolation; One Direction A → B, SIL CL 3, PL e Cat. 4

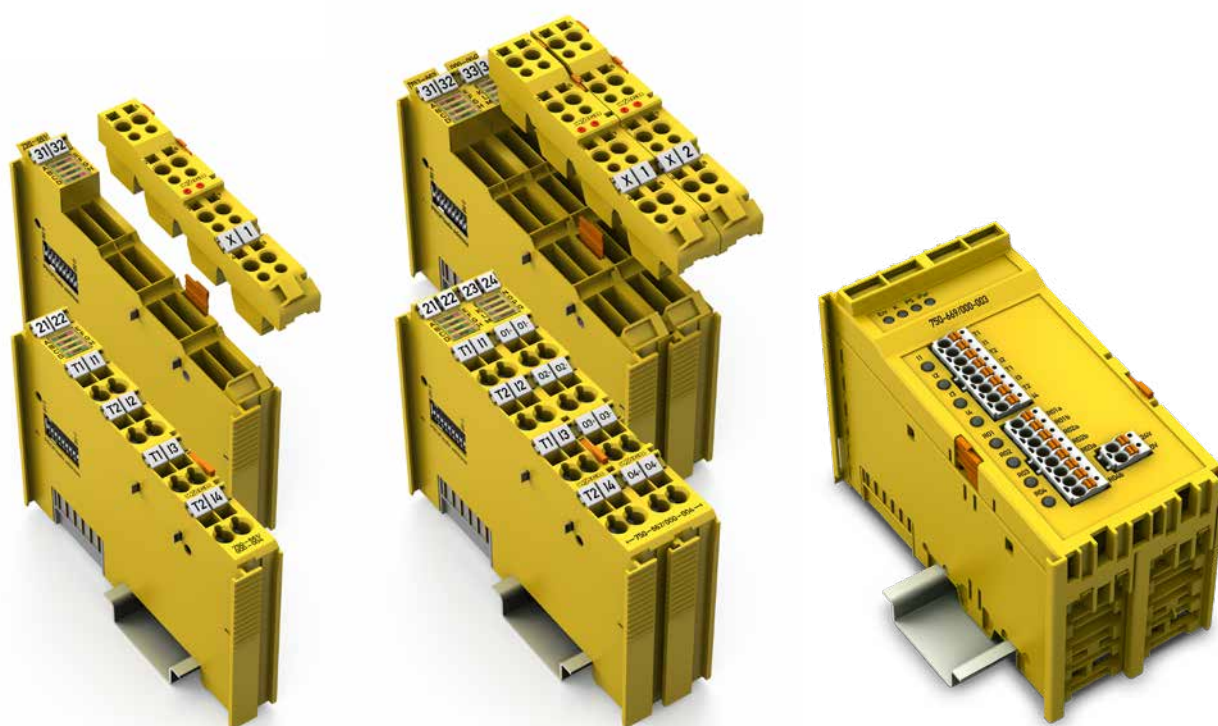


Functional Safety

Overview

Item Description	Rated up to	Item No.	Supported			
Input Module			PROFIBUS®	PROFINET®	PROFIsafe V2.4	PROFIsafe V2.6
4FDI 24 V PROFIsafe	SIL 3, PL e Cat. 4	750-661/000-004	■	■	■	■
	SIL 3, PL e Cat. 4	753-661/000-004	■	■	■	■
8FDI 24 V PROFIsafe	SIL 3, PL e Cat. 4	750-662/000-004	■	■	■	■
	SIL 3, PL e Cat. 4	753-662/000-004	■	■	■	■
4FAI 0/4-20 mA Diff PROFIsafe	SIL 3, PL e Cat. 4	750-668/000-004	■	■	■	■
	SIL 3, PL e Cat. 4	753-668/000-004	■	■	■	■
4F-Ex i DI 24 V PROFIsafe V2 iPar	SIL 3, PL e Cat. 4	750-663/000-003	■	■	■	
Input and Output Module			PROFIBUS®	PROFINET®	PROFIsafe V2.4	PROFIsafe V2.6
4FDI/4FDO 24 V/2 A PROFIsafe	SIL 3, PL e Cat. 4	750-667/000-004	■	■	■	■
	SIL 3, PL e Cat. 4	753-667/000-004	■	■	■	■
4FDI/2FDO 24 V/10 A PROFIsafe	SIL 3, PL e Cat. 4	750-666/000-004	■	■	■	■
4FDI/4FRO 48 VAC/60 VDC/6 A PROFIsafe V2 iPar	SIL 3, PL e Cat. 4	750-669/000-003	■	■	■	
NEW: Input and Output Module with Logic			PROFIBUS®	PROFINET®	PROFIsafe V2.4	PROFIsafe V2.6
4FDI/4FDO 24 V 2 A Logic PROFIsafe	SIL 3, PL e Cat. 4	750-667/000-104		■		■
4FDI/4FDO 24 V 2 A Logic PROFIsafe	SIL 3, PL e Cat. 4	753-667/000-104		■		■
4FDI/2FDO 24 V 10 A Logic PROFIsafe	SIL 3, PL e Cat. 4	750-666/000-104		■		■

* Supported by the end of 2022



WAGO GmbH & Co. KG

Postfach 2880 · D-32385 Minden
Hansastraße 27 · D-32423 Minden
info@wago.com
www.wago.com

Headquarters	+49 (0)571/ 887 - 0
Sales	+49 (0)571/ 887 - 44 222
Orders	+49 (0)571/ 887 - 44 333



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