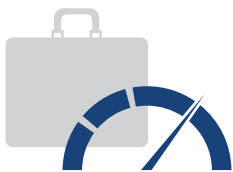
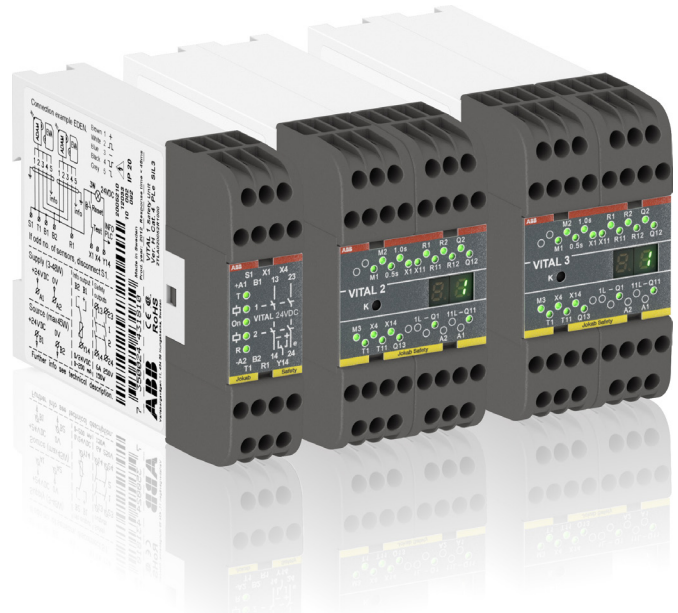


# Safety controller Vital

Vital is a configurable safety controller that does not require programming. It uses the DYNlink system, which allows up to 30 safety devices to be connected in series to the same circuit, while achieving PL e.

This enables a single Vital to supervise all safety functions on many machines that otherwise would have required a programmable safety controller or multiple safety relays.

Vital is also commonly used to supervise all emergency stops for larger machine lines.



## Speed up your projects

### Easy connection

Reduced installation and engineering time thanks to simple installation with serial connection using M12 connectors.

### Vital replaces several safety relays

Up to 30 safety devices can be connected to one controller.

### No programming required

The use of only one safety module without any programming simplifies engineering, commissioning and replacement.

### Less components

Significantly less components needed to achieve PL e/SIL 3.



## Continuous operation

### LED diagnostics

Integrated LED diagnostics reduces down time when troubleshooting.

### Detachable connection blocks

Detachable connection blocks simplify replacement.

### Exchange without configuration

The configuration is made with jumpers in the detachable connection blocks. In case of exchange, the new unit automatically gets the correct configuration.



## Safety and protection

### Easy to reach highest safety level

The DYNlink solution makes it possible to maintain the highest level of safety with up to 30 sensors connected in series.

### Extensive fault detection

The DYNlink solution enables unique fault detection features and prevents 2-channel faults.



# Applications and features

## Vital

### Applications

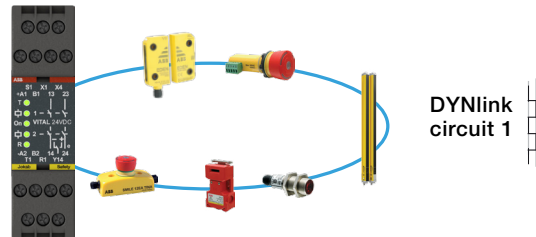
Vital safety controller excels at supervising multiple safety devices on the same machine, since up to 30 safety devices can be connected in series to the same input while achieving up to PL e.

Typical applications are machines with multiple doors/hatches or emergency stop buttons.

### Models

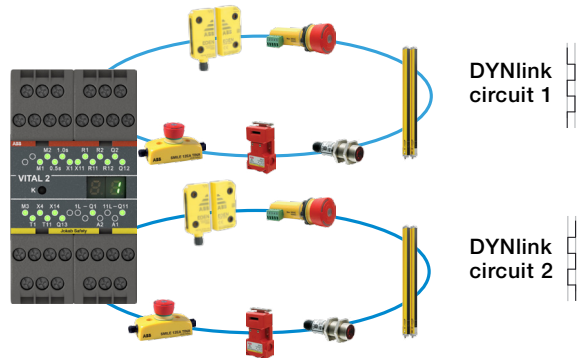
#### Vital 1 Safety controller

- One DYNlink circuit with up to 30 safety devices
- 2 safe outputs



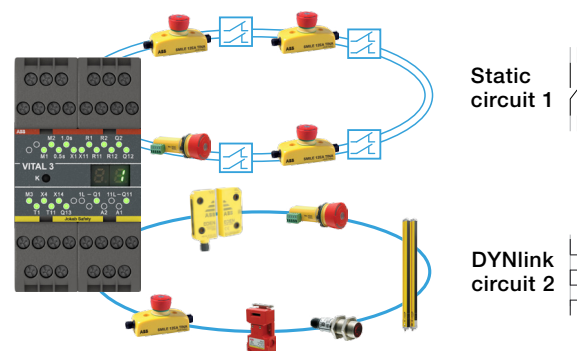
#### Vital 2 Safety controller

- Two DYNlink circuits with up to 10 safety devices each
- 2 x 2 safe outputs
- A time delay of up to 1.5 s can be set for output group 2
- 3 different modes can be configured:
  1. DYNlink circuit 1 controls output group 1, DYNlink circuit 2 controls output group 2
  2. DYNlink circuit 1 controls both output groups, DYNlink circuit 2 controls output group 23.
  3. Both circuits control both output groups in parallel



#### Vital 3 Safety controller

- One DYNlink circuit with up to 10 safety devices
- One static circuit for two-channel NC contact safety devices
- 2 x 2 safe outputs
- A time delay of up to 1.5 s can be set for output group 2
- 3 different modes can be configured:
  1. Static circuit 1 controls output group 1, DYNlink circuit 2 controls output group 2
  2. Static circuit 1 controls both output groups, DYNlink circuit 2 controls output group 2
  3. Both circuits control both output groups in parallel



### Features

#### DYNlink

The DYNlink circuit is a unique solution that uses one single channel to achieve up to Cat. 4/PL e. Vital sends out a square wave signal that is inverted by each safety device. A connection between B1 and S1 sets if Vital should receive a non-inverted signal, i.e. an even number of devices are connected (no shunt indicates an odd number). Vital checks the returning signal 200 times/second and a fault such as a short circuit will be detected before any safety device is used.

Vital can only be used with DYNlink safety device, such as Eden DYN, and devices with a Tina adapter.

# Ordering information

## Vital



2TLC010101V0201

Vital 1



2TLC172465F0201

Tina 2A



2TLC172465F0201

Tina 2B



2TLC172469F0201

Tina 3A



2TLC172469F0201

Tina 7A



2TLC172473F0201

Tina 10A



2TLC172475F0201

Tina 10B



2TLC172467F0201

Tina 6A

### Description

DYNlink circuits	Static circuit (2 NC)	Maximum DYNlink devices	Safe outputs	Delayable outputs	Type	Order code
1		30	2 NO		Vital 1	2TLA020052R1000
2		10 + 10	2 NO + 2 transistor (-24 V)	Yes	Vital 2	2TLA020070R4300
1	1	10	2 NO + 2 transistor (-24 V)	Yes	Vital 3	2TLA020070R4400

### Tina adaptation units to DYNlink

The Tina devices adapt the DYNlink signals from Pluto to safety components with mechanical contacts, such as E-stops, switches and light beams/curtains with dual outputs. Tina is available in several versions depending on the type of safety component that is connected to the DYNlink solution. Also available is connector blocks and a blind plug.

Type of safety device	Type of connection to the DYNlink loop	Description	Type	Order code
Devices with positively driven force-guided contacts like E-stop buttons and key switches	Via the device connection	Mounted directly on the device enclosure to a M20 cable entry.	Tina 2A	2TLA020054R0100
		Placed inside the safety device enclosure	Tina 2B	2TLA020054R1100
	M12-5 male connector	Mounted directly on the device enclosure to a M20 cable entry.	Tina 3A	2TLA020054R0200
	M12-5 male connector with extra conductor for the supply of the safety device	Two circuits and with supply voltage for the safety sensor. Connects to a M20 cable entry.	Tina 3Aps	2TLA020054R1400
Devices with OSSD outputs like Orion light guards	Removable terminal blocks	Mounted on a DIN rail in the electrical cabinet. Note that the connected safety device(s) must be mounted on the same cabinet.	Tina 7A	2TLA020054R0700
	M12-5 male connector	Adaptation of OSSD to DYNlink. Two M12 connectors.	Tina 10A	2TLA020054R1200
		Adaptation of OSSD to DYNlink with possibility to connect a local reset button. Three M12 connectors.	Tina 10B	2TLA020054R1300
Safety mats, edges and bumpers with short-circuit detection		Adaptation of OSSD to DYNlink with possibility to power the transmitter. Three M12 connectors.	Tina 10C	2TLA020054R1600
	M12-5 male connector	Short-circuit detection and adaptation to DYNlink.	Tina 6A	2TLA020054R0600

### Connection blocks for serial connection of DYNlink devices (or devices with Tina adapter)

Description	Type	Order code
Connection block for the serial connection of up to 4 DYNlink devices with M12-5 connectors	Tina 4A	2TLA020054R0300
Connection block for the serial connection of up to 8 DYNlink devices with M12-5 connectors	Tina 8A	2TLA020054R0500
Connection block for the serial connection of two DYNlink devices with M12-5 connectors	Tina 11A	2TLA020054R1700
Connection block for the serial connection of two DYNlink devices with M12-8 connectors, e.g. Dalton and Magne.	Tina 12A	2TLA020054R1800





### Blind plug to complete the serial connection on a connection block

All M12 connectors on Tina 4A or Tina 8A must be connected to a safety device or a Tina 1A. For example, if only 6 devices are connected to a Tina 8A, two Tina 1A are necessary.

Description	Type	Order code
Tina 1A is a blind plug connected to the unused M12 connectors of the connection blocks Tina 4A and Tina 8A.	Tina 1A	2TLA020054R0000

# Technical data

## Vital

Technical data	Vital 1	Vital 2/Vital 3
Approvals	 TÜV NORD 	 
Conformity	<b>CE</b> 2006/42/EC - Machinery 2014/30/EU - EMC 2011/65/EU - RoHS EN ISO 12100:2010, EN ISO 13849-1:2015, EN 62061:2005+A1:2013, +Cor.:2010, EN 60664-1:2007, EN 61000-6-2:2016, EN 61000-6-4:2007, EN 61496-1:2013	<b>CE</b> 2006/42/EC - Machinery 2014/30/EU - EMC 2011/65/EU - RoHS EN ISO 13849-1:2008+AC:2009, EN 62061:2005, EN 61496-1:2004+A1:2008+AC:2010, EN 60204-1:2006+A1:2009, EN 50156:2004, IEC 61511-1:2003+Corr.1:2004, EN 50178:1997, EN 61000-6-2:2005, EN 61000-6-4:2007+A1:2011, IEC/EN 61508:2010
Functional safety data		
EN 61508:2010	SIL3	SIL3
EN 62061:2005+A1:2013	SILCL3	SILCL3
EN ISO 13849-1:2008	PL e, Cat. 4	PL e, Cat. 4
PFH <sub>D</sub> Relay output	2.74 × 10 <sup>-8</sup>	2.00 × 10 <sup>-9</sup>
PFH <sub>D</sub> Transistor output	-	1.5 × 10 <sup>-9</sup>
Electrical data		
Power supply	+24 VDC ± 15%	
Max. switching capacity		Relay output (Q1, Q11)
AC-1	250 VAC / 6 A / 1500 VA	250 V / 2 A
AC-15	240 VAC / 2 A	250 V / 2 A
DC-1	24 VDC / 6 A / 150 W	50 V / 2 A
DC-13	24 VDC / 1 A	24 V / 2 A
Number of sensors		
Max. number of Eden DYN or Tina units per input	30	10
Total max. cable length (depending on the number of Eden/Tina units)	1000 m	500 m
Max. number of Spot 10 per input	6	1
Total max. cable length (depending on the number of Spot 10)	600 m	100 m
Operating temperature	-10°C to +55°C	

### More information

For more information, e.g. the complete technical information, see product manual for:

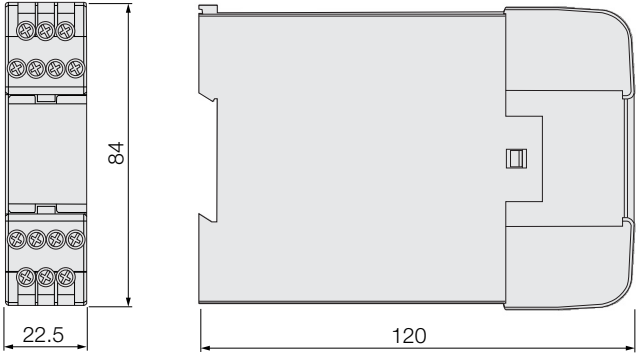
Vital 1: [2TLC172156M0201](#)

Vital 2/Vital 3: [2TLC172219M0201](#)

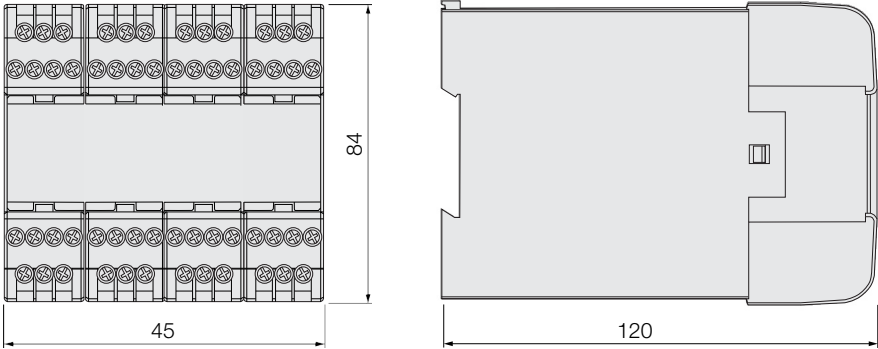
# Dimension drawings

## Vital

Vital 1



Vital 2/Vital 3



All dimensions in mm

# Contact us

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