

MAIN CATALOG

Safety Products

ABB Jokab Safety



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.

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.

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



2TLC0101010201

Vital 1



2TLC12453F0201

Tina 2A



2TLC12457F0201

Tina 2B



2TLC12459F0201

Tina 3A



2TLC12469F0201

Tina 7A



2TLC12473F0201

Tina 10A



2TLC12475F0201

Tina 10B



2TLC12467F0201

Tina 6A

Description

DYNlink circuits	Maximum DYNlink devices	Safe outputs	Type	Order code
1	30	2 NO	Vital 1	2TLA020052R1000

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. One M12-5 and one M12-8 connector.	Tina 10A v2	2TLA020054R1210
		Adaptation of OSSD to DYNlink with possibility to connect a local reset button. M12-8 connector for OSSD. M12-5 connector for DYNlink and reset button.	Tina 10B v2	2TLA020054R1310
Safety mats, edges and bumpers with short-circuit detection		Adaptation of OSSD to DYNlink with possibility to power the transmitter. M12-8 connector for OSSD. M12-5 for DYNlink and power.	Tina 10C v2	2TLA020054R1610
	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 serial connection of up to 4 DYNlink devices with M12-5 connectors	Tina 4A	2TLA020054R0300
Connection block for serial connection of up to 8 DYNlink devices with M12-5 connectors	Tina 8A	2TLA020054R0500
Connection block for serial connection of 2 DYNlink devices with M12-5 connectors	Tina 11A	2TLA020054R1700
Connection block for serial connection of 2 DYNlink devices with M12-8 connectors, e.g. 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
Blind plug connected to unused M12 connectors of the connection blocks Tina 4A and Tina 8A.	Tina 1A	2TLA020054R0000

M12 Y-connectors

Description	Type	Order code
M12 Y-connector for series connection of DYNlink devices such as Eden, Smile, Inca and Tina.	M12-3A	2TLA020055R0000
M12 Y-connector for parallel connection of 2 DYNlink devices.	M12-3B	2TLA020055R0100
M12 Y-connector for the connection of 2 DYNlink devices with only one cable.	M12-3E	2TLA020055R0200
M12 Y-connector for series connection of DYNlink devices with the StatusBus function.	M12-3S	2TLA020055R0600

Technical data

Vital

Technical data

Approvals	 TÜV NORD 
Conformity	 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, EN 60204-1:2006+A1:2009+Cor.:2010, EN 60664-1:2007, EN 61000-6-2:2016, EN 61000-6-4:2007, EN 61496-1:2013
Functional safety data	
EN 61508:2010	SIL3
EN 62061:2005+A1:2013	SILCL3
EN ISO 13849-1:2008	PL e, Cat. 4
PFH _D Relay output	2.74×10^{-8}
Electrical data	
Power supply	+24 VDC \pm 15%
AC-1	250 VAC / 6 A / 1500 VA
AC-15	240 VAC / 2 A
DC-1	24 VDC / 6 A / 150 W
DC-13	24 VDC / 1 A
Number of sensors	
Max. number of Eden DYN or Tina units per input	30
Total max. cable length (depending on the number of Eden/Tina units)	1000 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](#)

Connection diagrams

For Vital connection diagrams please see <https://library.abb.com/>

Dimension drawings

Vital

Vital 1

