16

Machine safety

Section 16 Machine safety

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Safety relays

Sentry safety relays

Screw-in connectors



Sentry with screw and push-in terminals

bansion of safe outputs	nual Reset	o hand device	ety Mats, Edges and Bumpers	al channel OSSD devices	al Channel with NO/NC contacts	al Channel with 2NC contacts	gle Channel
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Туре	Voltage	Timer	Safety Outputs	Exp	Mar	Ĭ	Safe	Dua	Dua	Dua	Sing	Ordering Code
BSR10	24 V DC		3 NO + 1 NC	•						1	•	2TLA010040R0000
BSR11	24 V DC		4 NO	•						1	•	2TLA010040R0200
BSR23	24 V DC		4 NO + 1 NC	•						•		2TLA010041R0600
SSR10	24 V DC		3 NO + 1 NC	•	•			•		•	•	2TLA010050R0000
SSR20	24 V DC		3 NO + 1 NC			•						2TLA010051R0000
SSR32	24 V DC	Off delay 0.5s	2 NO + 2 NO delayed		•			•		•	•	2TLA010052R0400
SSR42	24 V DC	Off delay 1.5s	2 NO + 2 NO delayed								•	2TLA010053R0400
SSR10M	3		3 NO + 1 NC	•	•					•		2TLA010050R0100
SSR20M	3		3 NO + 1 NC		•	•						2TLA010051R0100
TSR10	24 V DC	0 - 999s²	3 NO + 1 NC	•				•				2TLA010060R0000
TSR20	24 V DC	Off delay 0.5/1.5s	3 NO + 1 NC	•								2TLA010061R0000
TSR20M	3	Off delay 0.5/1.5s	3 NO + 1 NC	•								2TLA010061R0100
USR10	24 V DC	0 - 999s²	3 NO + 1 NC		•	•		•	•	•		2TLA010070R0000
USR22	24 V DC	0 - 999s²	2 NO + 2 NO delayed		•	•		•	•			2TLA010070R0400

 $^{^{1}}$ No monitoring of two-channel fault, i.e max Category 3 without fault exclusion

 $^{^2}$ Off-delay, On-delay, Time bypass or Time reset. Configurable model with display 3 85-265 V AC / 120-275 V DC

Safety relays

Sentry safety relays

Push-in connectors

Type	Voltage	Timer	Safety Outputs	Expansion of safe outputs	Manual Reset	Two hand device	Safety Mats, Edges and Bumpers	Dual channel OSSD devices	Dual Channel with NO/NC contacts	Dual Channel with 2NC contacts	Single Channel	Ordering Code
BSR10P	24 V DC		3 NO + 1 NC							1	•	2TLA010040R0001
BSR11P	24 V DC		4 NO							1	•	2TLA010040R0201
BSR23P	24 V DC		4 NO + 1 NC	•						•		2TLA010041R0601
SSR10P	24 V DC		3 NO + 1 NC	•	•			•		•	•	2TLA010050R0001
SSR20P	24 V DC		3 NO + 1 NC									2TLA010051R0001
SSR32P	24 V DC	Off delay 0.5s	2 NO + 2 NO delayed									2TLA010052R0401
SSR42P	24 V DC	Off delay 1.5s	2 NO + 2 NO delayed									2TLA010053R0401
SSR10MP	3		3 NO + 1 NC		•							2TLA010050R0101
SSR20MP	3		3 NO + 1 NC									2TLA010051R0101
TSR10P	24 V DC	0 - 999s²	3 NO + 1 NC					•			•	2TLA010060R0001
TSR20P	24 V DC	Off delay 0.5/1.5s	3 NO + 1 NC									2TLA010061R0001
TSR20MP	3	Off delay 0.5/1.5s	3 NO + 1 NC	•						•		2TLA010061R0101
USR10P	24 V DC	0 - 999s²	3 NO + 1 NC		•		•	•			•	2TLA010070R0001
USR22P	24 V DC	0 - 999s²	2 NO + 2 NO delayed									2TLA010070R0401

 $^{^{1}}$ No monitoring of two-channel fault, i.e max Category 3 without fault exclusion

 $^{^2}$ Off-delay, On-delay, Time bypass or Time reset. Configurable model with display 3 85-265 V AC / 120-275 V DC

Safety programmable logic controllers

Safety controllers and accessories

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Vital safety controller

Туре	DYNlink circuits	Maximum DYNlink devices	Safe outputs	Ordering Code
VITAL1	1	30	2 NO	2TLA020052R1000

Vital 1

Pluto programmable safety controller



Pluto B46 v2

				FailSafe input or		
Туре	Style	Number of I/O	FailSafe inputs	non-safe outputs	Safe Outputs	Ordering Code
S20 v2	Stand Alone	20	8	8	4	2TLA020070R4700
S46 v2	Stand Alone	46	24	16	6	2TLA020070R1800
B20 v2	Safety Bus	20	8	8	4	2TLA020070R4600
B22	Safety Bus	22	14	8	0	2TLA020070R4800
B46 v2	Safety Bus	46	24	16	6	2TLA020070R1700

Note: Pluto programmable safety controller SIL 3/Ple safety rated

Pluto Programmable Safety Controller Accessories



Pluto and accessories

Туре	Description	Ordering Code
	Gateway for 2-way communication bewteen the Pluto Safety Bus and	
GATE-E1P	Ethernet/IP	2TLA020071R9000
	Identifier, read only. For assigning Pluto an address on the Pluto Safety	
IDFIX-R	Bus	2TLA020070R2000
	Identifier, read / write. For assigning Pluto an address on the Pluto	
IDFIX-RW	Safety Bus	2TLA020070R2100
	External memory, 10 kbyte. For projects with only one Pluto, store the	
IDFIX-PROG 10k	PLC program	2TLA020070R2600
	Cable for connecting PC, USB port to Pluto for programming with Pluto	
Programming Cable USB	Manager	2TLA020070R5800

Safety sensors and emergency stops



Adam DYN Info and Eva General code

Eden non-contact safety sensors

Туре	Description	Ordering Code
Adam DYN Info	M12-5 for single & series applications, for use in DYNlink circuits	2TLA020051R5100
Adam DYN Status	M12-5, StatusBus for use in DYNlink circuits(Use on Pluto Only)	2TLA020051R5200
Eva General Code	All coded the same code	2TLA020046R0800
Eva Unique Code	Unique coding to prevent bypassing	2TLA020046R0900
Adam OSSD Info M12-5	M12-5 for single sensor applications, for use with Safety Relays	2TLA020051R5400
Adam OSSD Info M12-8	M12-8 for single & series applications, for use with Safety Relays	2TLA020051R5700

Smile and Inca emergency stops and resets buttons



Smile 11EA Tina





Smile 41 EWWWP

Туре	Description	Ordering Code
Smile Tina 11 EA	Emergency stop (red) in an enclosure, 1 x M12 5-pin male connector, for use in DYNlink circuits	2TLA030050R0000
Smile Tina 12 EA	Emergency stop (red) in an enclosure, $1\times M12$ 5-pin male connector and $1\times M12$ 5-pin female connector, for use in DYNlink circuits	2TLA030050R0200
Inca 1 Tina V2	Emergency stop (red) button for panel mounting, 22.5 mm holes, status LED in button, terminal block with screw terminals, for use in DYNlink circuits	2TLA030054R0010
Smile 11 RA	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Vital/Safety Relays	2TLA030053R0000
Smile 11 RB	Reset button in an enclosure, 1 button + LED with colored lens covers, 1 x M12 5-pin male connector. For use with Pluto	2TLA030053R0100
Smile 41 EWWWP	Smile 41 push-button box with an emergency stop (red), 3 push-buttons and kit of colored lens covers, for use with Pluto	2TLA030057R0100
Smile 11 EA	Emergency stop (red) in an enclosure, $2 \times NC$, Status LED, $1 \times M12$ 5-pin male connector. For use with Safety Relays	2TLA030051R0000
Smile 12 EA	Emergency stop (red) in an enclosure, 2 x NC, Status LED, 1 x M12 5-pin male connector and $1xM125$ -pin female connector. For use with Safety Relays	2TLA030051R0200
INCA 1	Emergency stop (red) button for panel mounting, 22.5 mm holes, 2 x NC, Status LED, terminal block with screw terminals . For use with Safety Relays	2TLA030054R0100

EStrong Z Heavy duty emergency stop - Dual channel



EStrong Z with and without LED

Туре	Description	Ordering Code
EStrong Z	Emergency Stop with 2 NC/2 NO, 1/2 NPT threads, SS	2TLA050220R1020
EStrong Z	Emergency Stop with 2 NC/2 NO, 1/2 NPT threads, SS, 24VDC LED	2TLA050220R1222
Accessory	1/2 NPT 316 SS Cable Gland	2TLA050040R0001

Safety control devices



JSTD1 and JSMC5



SafeBall two-handed control actuator

Туре	Description	Ordering Code
JSTD1-A	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 2 meters molded cable	2TLA020007R3000
JSTD1-B	1 NO and 1 NC independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection into an enclosure	2TLA020007R3100
JSTD1-E	2 NO independent switches, maximum load of 30 V DC - 2A resistive. IP67 protection, plastic body, 0.2 M wires x 4 for direct connection	2TLA020007R3400
JSTD25H	JSTD25H with JSTD1-B Safeballs pre-wired to a M12 8-pin connector with protective flanges for the Safeballs	2TLA020007R6300
JSMC7	JSM-C7, Suspension shelf for JSTD25 FHK	2TLA020007R1200
JSMC5	Angled ball joint for installation of a Safeball on a table or a steel housing	2TLA020007R0900

JSHD4 modular enabling device

Step 1 - Select the desired handle from among the 5 standard handles



Туре	Description	Ordering Code
JSHD4-1	Handle, no LEDs, no buttons, cannot use Anti-Tamper Board	2TLA020006R2100
JSHD4-2	Handle with LEDs, front button, and top button	2TLA020006R2200
JSHD4-3	Handle with LEDs	2TLA020006R2300
JSHD4-4	Handle with LEDs and front button	2TLA020006R2400
JSHD4-5	Handle with LEDs and top buttton	2TLA020006R2500

Step 2 - Select the desired "Bottom assembly", double check which options are available for the Handle selected



Туре	Description	Ordering Code
AA	With cable gland, only for use with JSHD4-1	2TLA020005R1000
AB	With Cannon connection	2TLA020005R1100
AC	With M12 connection (5 poles), only for use with JSHD4-1	2TLA020005R1200
AD	With M12 connection (8 poles)	2TLA020005R1300
AJ	With cable gland and PCB with 16 screw connections	2TLA020005R1800
AK	with Cannon connection (for replacement of older JSHD4 assemblies)	2TLA020005R1900
AL	Bottom assembly cable gland and 16 screw connections, holder for Eva	2TLA020005R2000

${\bf Step~3~(optional)-Choose~Anti-tamper~board, making~your~three~position~device~cheat~protected}\\$



Anti-tamper board

Туре	Description	Ordering Code
	Hand recognition for protection against tampering (cannot be used with	
Anti-Tamper Board	JSHD4-1)	2TLA020005R0900

Step 4 (optional) - Choose mounting and fastening hardware



JSM55 enabling switch holder

Туре	Description	Ordering Code
JSM55	Wall Bracket	2TLA040005R0500
JSM5B	JSM5B Wall Bracket for 2 key switches, for ex. MKEY 4/5	2TLA040005R0700
JSM54A	Wall bracket for Adam. Used with AL bottom part that has a holder for Eva	2TLA020205R2800
JSM50G	Bottom Plate for MKEY 4/5	2TLA020205R6300

Locks, gate boxes and switches

Magne process locks and accessories



Туре	Description	Ordering Code
Magne 3X	Magne 3X, No Safety Sensor, M12-5	2TLA042022R2700
Magne 4 DYN-Info	Magne 4 with Eden DYNlink, 8 Pin M12 Connector	2TLA042022R3400
Magne 4 OSSD-Info	Magne 4 with Eden OSSD, 8 Pin M12 Connector	2TLA042022R4600
Anchor 32A	Anchor plate	2TLA042023R1300
Anchor 32B	Anchor plate with permanent magnet (30N)	2TLA042023R0400
Anchor 32D	Anchor plate, center mounting	2TLA042023R0410
Anchor 32E	Anchor plate with permanent magnet, center mounting	2TLA042023R0420
JSM D21B	Mounting kit for Magne anchor plate for conventional door	2TLA042023R0500
JSM D24	Mounting kit for Eva for conventional door	2TLA042023R0300
JSM D27	Door handle for JSMD21B	2TLA042023R1000

Locks, gate boxes and switches

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MKEV 1



MKEY 8 and 9

MKey mechanical safety switches

Туре	Description	Ordering Code
MKEY 1	Mechanical Compact safety switch 1/2 NPT threads, 2NC/1NO Angle key	2TLA050021R1100
MKEY 4	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, with standard key	2TLA050001R1100
MKEY 4+	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, 40N, with standard key	2TLA050001R1101
MKEY 4	Mechanical Safety Switch 1/2 NPT threads, 2NC /1NO, SS Head, with standard key	2TLA050001R1110
MKEY 8	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to unlock	2TLA050011R1132
MKEY 8M	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to lock	2TLA050013R1132
MKEY 8ER	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, die cast, standard key, power to unlock, rear release	2TLA050015R1132
MKEY 8ERZ	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, stainless steel, standard key, power to unlock, rear release	2TLA050015R1122
MKEY 9	Mechanical Solenoid Safety Switch, 1/2 NPT threads, 2NC/1NO, 24 V solenoid, plastic, standard key, power to unlock	2TLA050007R1112
MKEY 9M	Mechanical Solenoid Safety Switch, $1/2$ NPT threads, 2NC/1NO, 24 V solenoid, plastic, with standard key, power to lock	2TLA050009R1112
Accessory	Mkey 4,5,6,8,9 Flat Actuator	2TLA050040R0220
Accessory	Mkey 4,5,6,8,9 Std. Actuator	2TLA050040R0202
Accessory	Mkey 4,5,6,8,9 Met. Flex Key	2TLA050040R0203

Sense non-contact magnetic safety switch



Sense 7Z

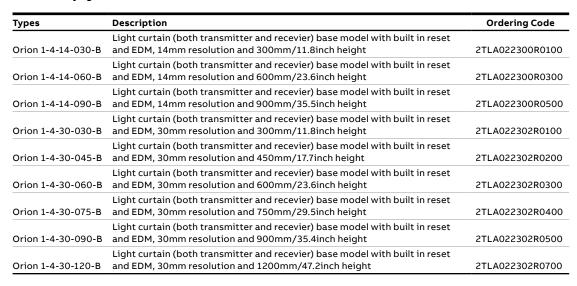
Туре	Description	Ordering Code
Sense 5Z	Stainless Steel body, 5m cable, 2NC/1NO LED, 24VDC, coded actuator	2TLA050054R5120
Sense 5Z QC	Stainless Steel body, M12 8 pin quick connect, 2NC/1NO LED, 24VDC, coded actuator	2TLA050054R2120
Sense 6	Plastic body, 5m cable, 2NC/1NO LED, 24VDC	2TLA050074R5100
Sense 6 QC	Plastic body, M12 8 pin quick connect, 5m cable, 2NC/1NO LED, 24VDC	2TLA050074R2100
Sense 7Z	Stainless Steel body, 5m cable, 2NC/1NO LED, 24VDC, coded actuator	2TLA050056R5120
Sense 7Z QC	Stainless Steel body, M12 8 pin quick connect, 2NC/1NO LED, 24VDC, coded actuator	2TLA050056R2120
Sense 8	Plastic body, 5m cable, 2NC/1NO LED, 24VDC	2TLA050076R5100
Sense 8 QC	Plastic body, M12 8 pin quick connect, 2NC/1NO LED, 24VDC	2TLA050076R2100

Optical safety devices

Orion safety light curtains and accessories

Orion 1 safety light curtain base model





Orion 2 safety light grid base model perimeter guarding

Туре	Description	
•	Light grid (both transmitter and recevier) base model with built in reset and	
Orion 2-4-K4-120-B	EDM, 4 beam with 300mm beam spacing. 1200mm/47.2inch height	2TLA022304R0300

Orion accessories

Туре	Description	Ordering Code
M12-CT01BA	Transfer cable, for use with Tina 10A and 10C, puts basic model light curtain in auto reset with no EDM	2TLA022315R3000
JSM-ORION03	JSM-03 Rotational bracket for Orion 1 Base	2TLA022310R0100

Note: see page 16-11 for a list of cables available



Rope pull switches

LineStrong

LineStrong rope pull switches





LineStrong 2



LineStrong 3L



Rope pull kit



Pulley galvanized

Туре	Description	Ordering Code
LineStrong 1	Rope pull for up to 50m, 2NC/2NO with 1/2 NPT threads	2TLA050200R1030
LineStrong 1	Rope pull for up to 50m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050200R1232
LineStrong 2	Rope pull for up to 80m, 2NC/2NO with 1/2 NPT threads	2TLA050202R1030
LineStrong 2	Rope pull for up to 80m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050202R1232
LineStrong 3D	Rope pull for up to 200m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050204R1232
LineStrong 3D	Rope pull for up to 200m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050204R1233
LineStrong 3L	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050206R1232
LineStrong 3L	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050206R1233
LineStrong 3R	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 24VDC LED	2TLA050208R1232
LineStrong 3R	Rope pull for up to 100m, 2NC/2NO with 1/2 NPT threads, with 120VAC LED	2TLA050208R1233
Accessory	Emergency Stop Button	2TLA050211R0005
Accessory	10m stainless steel rope pull kit with Allen Key	2TLA050210R0120
Accessory	30m stainless steel rope pull kit with Allen Key	2TLA050210R0420
Accessory	50m stainless steel rope pull kit with Allen Key	2TLA050210R0520
Accessory	10m galvanized steel rope pull kit with Allen Key	2TLA050210R0130
Accessory	30m galvanized steel rope pull kit with Allen Key	2TLA050210R0430
Accessory	50m galvanized steel rope pull kit with Allen Key	2TLA050210R0530
Accessory	Flex Roller eyebolt with adjustment	2TLA858006R1300
Accessory	1/2 NPT Stainless Steel cable gland	2TLA050040R0001
Accessory	Rope tensioner, stainless steel	2TLA050210R4020
Accessory	Rope tensioner, galvanized steel	2TLA050210R4030
Accessory	Pulley galvanized steel	2TLA050210R6030
Accessory	Safety Spring, 220MM, Stainless Steel	2TLA050211R0004

Note: Order Estop buttons for LineStrong 1/2/3 separately

Safety accessories

DYNlink Tina adapters

DYNlink adapters for dual channel devices



Tipo 24 /P



Tina 3A



Tina 7A



Tina 10A/B/C

Туре	Description	Type of connection to the DYNlink loop	Type of safety device commonly connected to	Ordering Code
Tina 2A	Mounted directly on the device enclosure to an M20 cable entry	Via the device	Devices with positively driven	2TLA020054R0100
Tina 2B	Placed inside the safety device enclosure	Connection	force-guided contacts like E-Stop buttons and key	2TLA020054R1100
Tina 3A	Mounted directly on the device enclosure to an M20 cable entry	M12-5 male connector	switches	2TLA020054R0200
Tina 3Aps	Two circuits and with supply voltage for a safety sensor. Connects to an M20 cable entry	M12-5 male connector with extra conductor for the supply of the safety device		2TLA020054R1400
Tina 7A	Mounted on a DIN rail in the electrical cabinet. Note that the connected safety device(s) must be mounted in the same cabinet	Removable terminal blocks		2TLA020054R0700
Tina 10A v2	Adaptation of OSSD to DYNlink. Two M12 connectors	M12-5 male connector		2TLA020054R1210
Tina 10B v2	Adaptation of OSSD to DYNlink, for local reset, Three M12 connectors	M12-5 male connector	Devices with OSSD outputs like Orion light guards	2TLA020054R1310
T: 100 0	Adaptation of OSSD to DYNlink with possibility to power the transmitter.			271 400005 404540
Tina 10C v2	Three M12 connectors	M12-5 male connector		2TLA020054R1610

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



Туре	Description	Ordering Code
	Connection block for the serial connection of up to 4 DYNlink devices with M12-5	
Tina 4A	connectors	2TLA020054R0300
	Connection block for the serial connection of up to 8 DYNlink devices with M12-5	
Tina 8A	connectors	2TLA020054R0500
	Connection block for the serial connection of up to 2 DYNlink devices with M12-5	
Tina 11A	connectors	2TLA020054R1700

Tina 1A is used to complete the serial connection on a Tina 4/8A safety port block



Туре	Description	Ordering Code
•	Tina 1A is a blind plug connected to the unused M12 connectors of the connection	2TLA020054R0000
Tina 1A	blocks Tina 4A and Tina 8A	

Safety accessories

Cables and connectors

Cables





Type	Description	Ordering Code
M12-C61	6m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R0000
M12-C101	10m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R1000
M12-C201	20m shielded cable Single Ended with M12 5 pin female connector	2TLA020056R1400
M12-C112	1m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2000
M12-C312	3m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2100
M12-C612	6m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2200
M12-C1012	10m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2300
M12-C2012	20m shielded cable Double Ended with M12 5 pin female connector and M12 5 pin male connector	2TLA020056R2400
M12-C63	6m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R3000
M12-C103	10m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R4000
M12-C203	20m shielded cable Single Ended with M12 8 pin female connector	2TLA020056R4100
M12-C134	1m shielded cable Double Ended with M12 8 pin female connector and M12 8 pin male connector	2TLA020056R5000
M12-C334	3m shielded cable Double Ended with M12 8 pin female connector and M12 8 pin male connector	2TLA020056R5100

Field wirable M12 5 pin

Field wirable connectors

Туре	Description	Ordering Code
M12-C01	Field wirable M12 5 pin female with screw terminals	2TLA020055R1000
M12-C02	Field wirable M12 5 pin male with screw terminals	2TLA020055R1100



5 pin series Y-connector

Y-connectors

Туре	Description	Ordering Code
M12-3A	5 pin series Y-connector for DYNlink devices	2TLA020055R0000
M12-3S	5 pin series Y-connector that supports DYNlink devices with StatusBus, Pluto Only	2TLA020055R0600