IDEM Z-Range Safety Switches

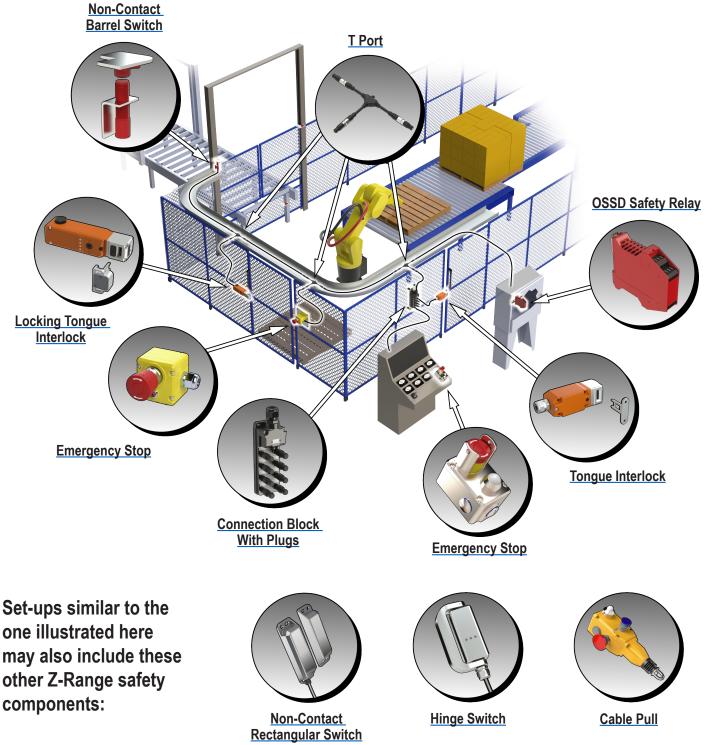


IDEM's Z-Range of products have one set of dual OSSD outputs and one set of dual OSSD inputs. This enables the devices to be wired in series, reducing cost and time associated with wiring back to the panel. Up to 30 Z-Range devices can be connected to one safety relay.

These safety switches feature self monitoring OSSD outputs to achieve CAT 4 PLe, according to ISO 13849-1, and SIL3, according to IEC 62061, even when connected in a series.

Components in the Z-Range consists of non contact switches, hinge switches, emergency stop control stations, solenoid locking RFID tongue interlocks, and non-locking tongue interlocks, along with t-port cables, connection blocks and accessories.

Z-Range Safety Switch Installation Example



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Safety Electrical Components tESC-219

IDEM M12 Connection Box For Use With Z-Range Switches





- When combined with the T-port, allows you to connect up to 30 Z-Range devices in series to a single safety controller
- · Configured for dual channel to a safety controller
- Shorting plugs must be inserted into all unused ports
- M20 conduit exit; M20 cable gland accepts cable OD 6.5-12.0 mm [0.26-0.47 in]

IDEM M12 Connection Box For Use With Z-Range Switches Selection Chart							
Part Number	Price	Description	Ports	Input Connections	Output Connection	Indicators	Drawing
<u>140210-Z</u>	\$262.00	IDEM junction block for use with IDEM Z-Range switches only	8	8-pin M12 sockets	Cable clamp for field-wired connection	24VDC LED	<u>PDF</u>
<u>140205</u>	\$22.00	Shorting plug, 8 pole, for use with IDEM Z-Range connection blocks	-	-	-	-	<u>PDF</u>
<u>140204</u>	\$41.00	T-port for use with Z-Range safety switches	-	2 8-pole M12 axial male	1 8-pole M12 axial female	-	<u>PDF</u>

NOTE: The appropriate shorting plug must be inserted into all unused ports.



140210-Z



140204



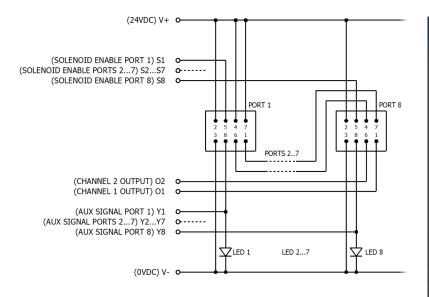
140205

IDEM Connection Box For Use With Z-Range Switches



IDEM M12 Connection Box For Use With Z-Range Switches Specifications				
Port Connection Type	8-pin M12 female sockets (qty 8)			
Operating Temperature	-20 to +40°C [-4 to +104°F]			
Supply Voltage	24VDC ±10%			
Maximum Current 500mA (each port) if solenoid feed is used				
Body Material	Polyester			
Internal Terminals	Spring-type clamp for 22-30 AWG conductors			
Cable Exit	Cable Exit M20 x 1.5 mm cable gland (M20 cable gland accepts cable OD 6.5 mm to 12.0 mm [0.26 in to 0.47 in]			
Mounting 2xM4 bolds, 4.6 mm [0.18 in] diameter clearance holes				
Accessory	Shorting plug for unused ports			
LEDs (1-8)	Red, auxiliary indication of switch open			

Connections (140210-Z) for Z-Range Switches Only



	Output Terminal Connections					
Terminal	Output	Indication	LED Status			
Y1	Auxiliary out +24VDC	Switch 1 open	LED 1 on			
Y2	Auxiliary out +24VDC	Switch 2 open	LED 2 on			
Y3	Auxiliary out +24VDC	Switch 3 open	LED 3 on			
Y4	Auxiliary out +24VDC	Switch 4 open	LED 4 on			
Y5	Auxiliary out +24VDC	Switch 5 open	LED 5 on			
Y6	Auxiliary out +24VDC	Switch 6 open	LED 6 on			
Y7	Auxiliary out +24VDC	Switch 7 open	LED 7 on			
Y8	Auxiliary out +24VDC	Switch 8 open	LED 8 on			
V+	Supply +24VDC					
V-	Supply 0VDC					
S1	Solenoid energize (apply +24VDC (if used) Port 1					
S2	Solenoid energize (apply +24VDC (if used) Port 2					
S3	Solenoid energize (apply +24VDC (if used) Port 3					
S4	Solenoid energize (apply +24VDC (if used) Port 4					
S5	Solenoid energize (apply +24VDC (if used) Port 5					
S6	Solenoid energize (apply +24VDC (if used) Port 6					
S7	Solenoid energize (apply +24VDC (if used) Port 7					
S8	Solenoid energize (apply +24VDC (if used) Port 8					
01	Safety output channel 1					
O2	Safety output channel 2					

IDEM Cables

Connection Cables

IDEM connection cables are sold as a complete cable that is not meant to be cut into, so the manufacturer doesn't guarantee the internal wire colors will always be the same. It will always be pin 1 to pin 1, pin 2 to pin 2, etc., but the internal colors might change.

Only the pigtail cables have fixed wire colors.

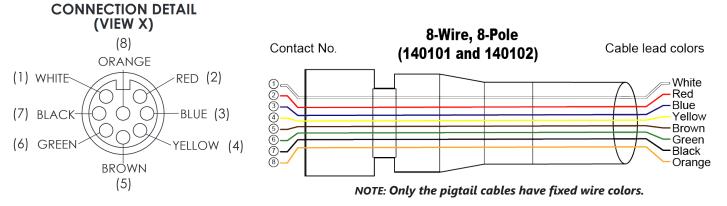


140201

IDEM Connection Cables Selection Chart						
Part Number	Price	Description	Connection	Length	Cable Jacket	
<u>140201</u>	\$41.00	Connection cable	8-pin M12 axial female to 8-pin M12 axial male	2m [6.56 ft]	Black PVC	
<u>140202</u>	\$51.00	Connection cable	8-pin M12 axial female to 8-pin M12 axial male	5m [16.40 ft]	Black PVC	
<u>140203</u>	\$62.00	Connection cable	8-pin M12 axial female to 8-pin M12 axial male	10m [32.81 ft]	Black PVC	

Female Quick Disconnect Lead				
Part Number	Price	Description	Exit Type/Cable Length	
<u>140101</u>	\$59.00	8-pin M12 female	Pigtail, 5m [16.4 ft]	
<u>140102</u>	\$88.00	quick disconnect	Pigtail, 10m [32.8 ft]	





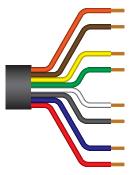
IDEM Connection Cables General Specifications				
Temperature Rating	105°C [221°F]			
Core	22 strands of 0.12 mm bare copper			
Inner insulation (Core) Diameter	1.35 (±0.1) mm			
Outer Sheath (Jacket) Color	Black (printed)			
Outer Insulation	PVC			
Inner Insulation	PVC			
Number of cores	8 cores (24AWG) UL style 2517			
Rated Voltage/Current	250V / 3A			

IDEM Z-Range Safety Switches Electrical Connections



Wiring

IDEM Quick Disconnect Leads Color Coding



Orange – Guard open signal out Brown – Not used

Yellow – Safety input 2 (see note) Green – Safety output 2 (OSSD)

White – Safety output 1 (OSSD) Black – Safety input 1 (see note)

Blue – 0VDC Red – +24VDC **Connection Colors**



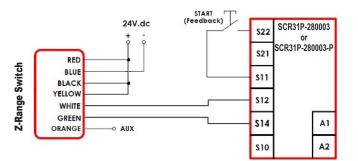
Pin View from Switch M12 Male

Coded Magnetic Switches Electrical Connections

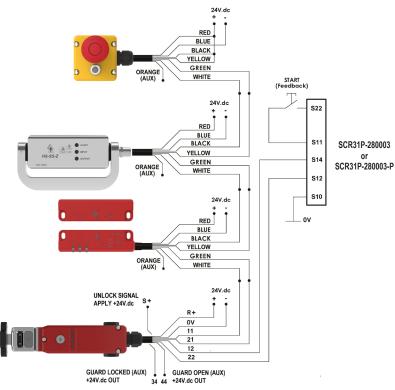
Quick Disconnect Connector Pin Out	IDEM Quick Disconnect Leads Color Coding	Terminal	Switch Circuit
2	Red	R+	Supply +24 VDC
3	Blue	0V	Supply 0VDC
7	Black	11	Safety Input 1
1	White	12	Safety Output 1
4	Yellow	21	Safety Input 2
6	Green	22	Safety Output 2
8	Orange	44	Guard open signal +24VDC out
N/A	_	34	Guard unlocked signal +24VDC out
5	Brown	Not used	Not used

NOTE: Safety outputs 1 and 2 are OSSD signals Safety inputs 1 and 2 are 24VDC if not in series or OSSD inputs if in series

Single Switch to SCR31P-280003 or SCR31P-280003-P



Mulitple Switches to SCR31P-280003 or SCR31P-280003-P



Safety Products



Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.

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