

## Battery Disconnect Switch BDS-A (Latching)

- Limiting continuous current 190A at 85°C
- Electrically settable and resettable ON/OFF bistable device
- High peak current carrying capability up to 1500A<sup>1)</sup>

### Typical applications

Preheating systems (e.g. for diesel engines, catalytic converters), battery disconnection to prevent fire caused by short circuits during an accident, dual battery applications provide the start reliability by a separate starter battery, keeps the power net in balance and to control and secure the health of the energy storage systems, seasonal, service and transport deactivation, high current switching, energy management, battery coupling.



F130\_fbw3

Contact Data	12VDC	24VDC
Contact arrangement	1 form X, 1 NO DM (bridge)	
Rated voltage	12VDC	24VDC
Maximum switching voltage	16VDC	32VDC
Limiting continuous current <sup>1)</sup> - load current from terminal B(+) to A(-)		
23°C, load cable 50mm <sup>2</sup>	260A	
85°C, load cable 50mm <sup>2</sup>	190A	
125°C, load cable 50mm <sup>2</sup>	88A	
Limiting making current, resistive load, cable 50mm <sup>2</sup> , 23°C, ton/toff=0.5s/10min	1500A, >5 ops. <sup>1)</sup>	
Limiting breaking current, resistive load, cable 50mm <sup>2</sup> , 23°C, ton/toff=0.5s/10min	1500A, >5 ops. <sup>1)</sup>	
Limiting short-time current, overload current at 23°C, cable 50mm <sup>2</sup> , 1000A, 1s - 0A, 9s	50x10 <sup>3</sup> ops. <sup>2)</sup>	
Contact material	silver alloy	
Contact style	bridge contact	
Initial voltage drop	at 100A<40mV post 1min	
Operate/release time typ.	5ms at 14VDC (coil voltage)	
Electrical endurance		
inductance 0.1mH, temperature change (-40/25/120°C) 2h each; cable 35mm <sup>2</sup>		
180A, ton/off	>1.3x10 <sup>4</sup> ops., 1.5/5s.	
100A, ton/off	>5x10 <sup>4</sup> ops., 1.5/5s	
150A, ton/off	>2.5x10 <sup>4</sup> ops., 0.5/5s	
100A, ton/off	>7x10 <sup>4</sup> ops., 0.5/5s	
Mechanical endurance	>1.5x10 <sup>5</sup> ops.	

1) Important: please pay attention to load current direction.  
2) Values are influenced by system temperature and load current. For further details please consult TE relay application engineers.

Coil Data																	
Magnetic system	bistable (two coil system)																
Coil voltage range	2021: 6VDC - 12VDC (15 to 100ms) 23°C (set - reset) 2024: 12VDC - 24VDC (15 to 100ms)																
Rated coil voltage	12/24VDC																
Polarity for set/reset energization	<table border="0"> <tr> <td></td> <td>set</td> <td></td> <td>reset</td> </tr> <tr> <td></td> <td>-</td> <td>+</td> <td>-</td> </tr> <tr> <td></td> <td>pin 2</td> <td>pin 4</td> <td>pin 3</td> </tr> <tr> <td></td> <td></td> <td></td> <td>pin 1</td> </tr> </table>		set		reset		-	+	-		pin 2	pin 4	pin 3				pin 1
	set		reset														
	-	+	-														
	pin 2	pin 4	pin 3														
			pin 1														

Coil versions, bistable 2 coils					
Coil code	Rated voltage [VDC]	Set voltage [VDC]	Reset voltage [VDC]	Set/reset coil resistance [Ω]	Impulse length [ms]
2021	12	6.0	6.0	4.7 ±10%	15 to 100
2421	24	12.0	12.0	19.9 ±10%	15 to 100

All figures are given for coil without preenergization, at ambient temperature +23°C.

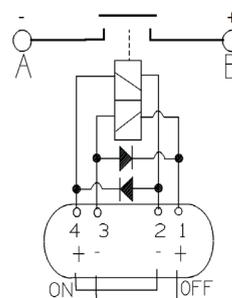
Insulation Data	
Initial dielectric strength	
between open contacts	500V <sub>rms</sub>
between contact and coil	500V <sub>rms</sub>

Other Data	
EU RoHS/ELV compliance	compliant
Protection to heat and fire	UL94-HB or better <sup>3)</sup>
Ambient temperature	-40 to +125°C
Degree of protection	IP54
Vibration resistance (functional)	
ISO 16750-3 (2007-08)	22 to 500Hz, >10g <sup>4)</sup>
Test IV	No change of switching state >10μs
Shock resistance (functional)	
IEC 60068-2-27 (1995-03)	min. 40g 11ms <sup>4)</sup>
half sine	No change of switching state >10μs
Terminal type	connector and screw
Weight	approx. 210g (7.4oz)
Packaging unit and delivery <sup>5)</sup>	24 pcs

3) Refers to used materials.  
4) Valid for NC contacts, NO contact values significantly higher.  
5) Bistable relays are delivered in the reset position (open contacts). Due to mechanical impacts during transportation, we advise to check the contact status on receipt. Latching (delivery status "ex works").

### Terminal Assignment

X2D2C  
1 form X, 1 NO DM (bridge),  
with 2 coils and 2 diodes

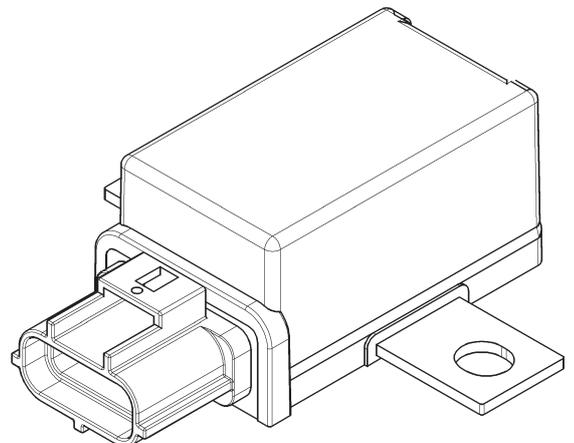
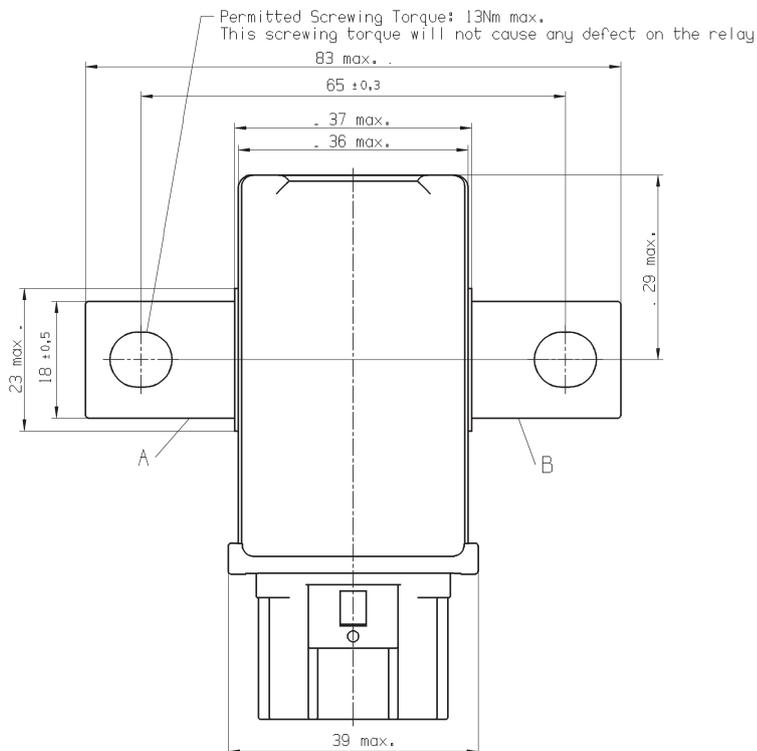
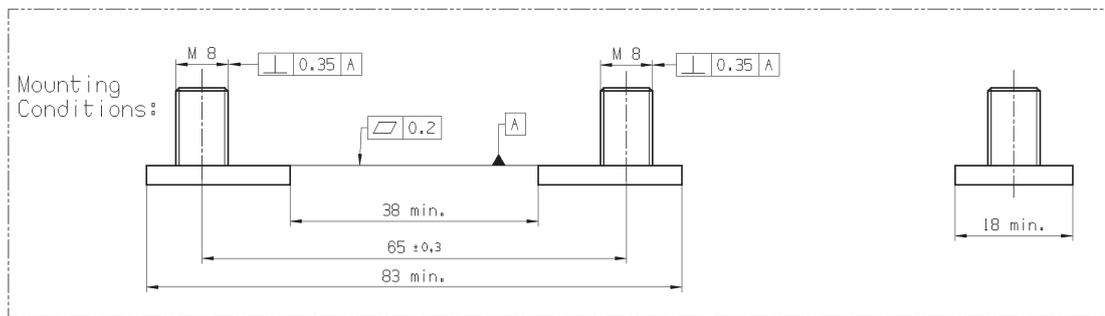
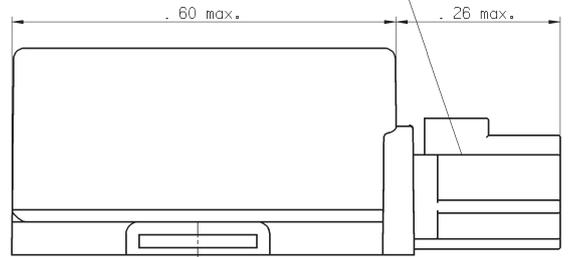
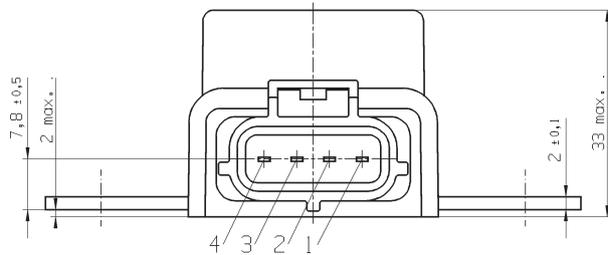


Terminal	Function
4	Set coil (+)
3	Reset coil (-)
2	Set coil (-)
1	Reset coil (+)
A	Load terminal (-)
B	Load terminal (+)

Set voltage for 15 to 100ms: load terminals A(-) and B(+) get connected  
Reset voltage for 15 to 100ms: load terminals A(-) and B(+) get disconnected

**Battery Disconnect Switch BDS-A (Latching)** (Continued)

AMP Sensor Connector 4-Position 0,070 Series,  
appropriate for AMP part no. 184046-1



**Battery Disconnect Switch BDS-A (Latching)** (Continued)

<b>Product code structure</b>	Typical product code	<b>V23130</b>	<b>-C</b>	<b>2021</b>	<b>-A</b>	<b>4</b>	<b>00</b>
<b>Type</b>	<b>V23130</b> Battery Disconnect Switch BDS-A						
<b>Contact arrangement</b>	<b>C</b> 1 form X, 1 NO DM						
<b>Coil</b>	<b>2021</b> 12VDC (bistable)		<b>2421</b> 24VDC (bistable)				
<b>Protection class</b>	<b>A</b> IP54						
<b>Contact material</b>	<b>4</b> Silver alloy						
<b>Standard version</b>	<b>00</b> Standard						

Product code	Arrangement	Coil	Circuit	Coil suppr.	Protection	Terminals	Feature	Part number
V23130-C2021-A412	1 form X,	12VDC	X2D2C	Diode	IP54	Screw + connector	Bracket	1-1414939-4
V23130-C2421-A431	1 NO DM (bridge)	24VDC						7-1414778-3

This list represents the most common types and does not show all variants covered by this datasheet.  
Other types on request.