

Separate units: Blocks

▶ LED BLOCKS

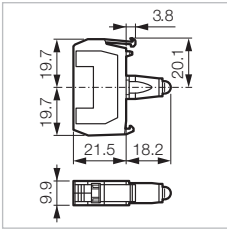
 Technical Info (p. 103)

SCREW TERMINALS

Part Number



33EARL



12/24 Vac/Vdc	
○ White	33EAWL
● Red	33EARL
● Green	33EAGL
● Blue	33EABL
● Yellow	33EAYL
48 Vac/Vdc	
○ White	33EAWL4
● Red	33EARL4
● Green	33EAGL4
● Blue	33EABL4
● Yellow	33EAYL4
130 Vac	
○ White	33EAWM
● Red	33EARM
● Green	33EAGM
● Blue	33EABM
● Yellow	33EAYM
230 Vac	
○ White	33EAWH
● Red	33EARH
● Green	33EAGH
● Blue	33EABH
● Yellow	33EAYH

Separate units: Blocks

LED BLOCKS



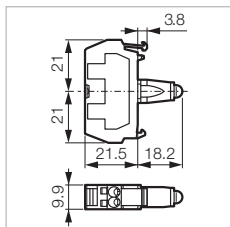
Technical Info (p.103)

PLUG-IN TERMINALS

Part Number



33RAGH



12/24 Vac/Vdc

- White
- Red
- Green
- Blue
- Yellow

- 33RAWL
- 33RARL
- 33RAGL
- 33RABL
- 33RAYL

130 Vac

- White
- Red
- Green
- Blue
- Yellow

- 33RAWM
- 33RARM
- 33RAGM
- 33RABM
- 33RAYM

230 Vac

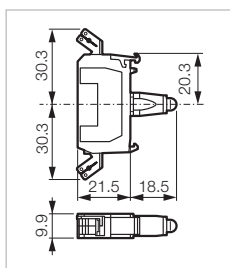
- White
- Red
- Green
- Blue
- Yellow

- 33RAWH
- 33RARH
- 33RAGH
- 33RABH
- 33RAYH

FASTON TERMINALS



33DARL



12/24 Vac/Vdc

- White
- Red
- Green
- Blue
- Yellow

- 33DAWL
- 33DARL
- 33DAGL
- 33DABL
- 33DAYL

130 Vac

- White
- Red
- Green
- Blue
- Yellow

- 33DAWM
- 33DARM
- 33DAGM
- 33DABM
- 33DAYM

230 Vac

- White
- Red
- Green
- Blue
- Yellow

- 33DAWH
- 33DARH
- 33DAGH
- 33DABH
- 33DAYH

Separate units: Blocks

► LED BLOCKS



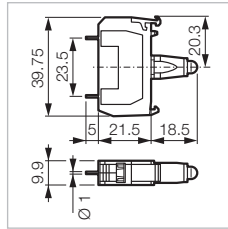
Technical Info (p. 103)

FOR PCB (PIN STYLE)

Part Number



33PAWL



12/24 Vac/Vdc

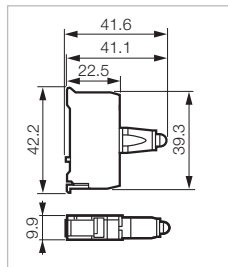
- White
- Red
- Green
- Blue
- Yellow

33PAWL
33PARL
33PAGL
33PABL
33PAYL

FOR CONTROL STATIONS (SCREW TERMINALS)



33SAGH



For empty LBX control stations (p. 98 to 99)
Base mounted



12/24 Vac/Vdc

- White
- Red
- Green
- Blue
- Yellow

33SAWL
33SARL
33SAGL
33SABL
33SAYL

130 Vac

- White
- Red
- Green
- Blue
- Yellow

33SAWM
33SARM
33SAGM
33SABM
33SAYM

230 Vac

- White
- Red
- Green
- Blue
- Yellow

33SAWH
33SARH
33SAGH
33SABH
33SAYH

Technical Specifications

► GENERAL

Characteristics	Data	Standards
► Storage temperature	- 40 °C to + 70 °C	
► Operating temperature	- 25 °C to + 70 °C	
► Climatic resistance	Constant humid heat Cyclic damp heat Resistance to sea air	IEC 60068-2-3 IEC 60068-2-30 IEC 60068-2-52
► Degree of protection	IP 66 for standard heads IP 67 for shrouded heads IP 66 for equipped control stations IP 20 at the rear of the panel for contact blocks and one piece pilot lights Type 1, 2, 3, 3R, 3S, 4, 4X, 12, and 13 for heads and control stations	IEC 60529 NEMA standard
► Protection against mechanical impacts	IK 05 illuminated and non-illuminated heads IK 07 empty control station	IEC 62262
► Electrical insulation	Class II - heads and control station	IEC 60947-5-1
► Terminal marking		IEC 60947-1
► Tightening torques	Locking ring: recommended 3 N.m terminals: max. 1.2 N.m	
► Approvals	UL United states and Canada BV Bureau Véritas Certification OC/CB	UL 508, CSA 22.2 Marine rules IEC 60947-5-1 IEC 60947-5-5 IEC 60947-5-4
► Vibrations	withstand vibration Fc test: 2 to 25 Hz, 1.6 mm; 25-100 Hz, 4 g	IEC 60068-2-6

Technical Specifications

► HEADS

Characteristics	Data	Standards
► Mechanical endurance	Spring return: 5,000,000 Push-push: 500,000 Selector switches: 300,000 Mushroom head maintained function EN 418: 10,000 Mushroom head maintained function: 150,000	
► Activation force in N	Spring return + NO: 6.5 Spring return + NC: 4.5 Additional NO contact: 4.5 Additional NC contact: 3.0 Push-pull mushroom head + NO + NC: 27 Push-turn mushroom head + NO + NC: 22 Push-pull mushroom head EN 418 + NO + NC: 37 Push-turn mushroom head EN 418 + NO + NC: 60	
► Activation force in Nm	Selector switch + NO: 0.04 Additional NO contact: 0.03	

► EMERGENCY STOP ACTUATORS - EN 418/ISO 13850:

According to IEC/EN60947-5-5, the emergency stop function can be provided by an EN418/ISO13850 mushroom head combined with a "positive opening" NC contact block.

The mechanism of our EN418/ISO13850 mushroom heads is so designed that a "push" action of sufficient force to open the contact systematically triggers an irreversible locking of this opening. This generates an "emergency stop" signal which can be cancelled only by deliberate manual resetting of the mushroom head (pull and turn or unlocking by key).

This function allows to generate an "emergency stop" signal for any equipment subject to directive 98/37CE (machinery safety) completed by the IEC 60204-1 standard.

The EN418/ISO13850 mushroom heads also comply with the safety requirements detailed in standards EN418 and ISO13850.

Technical Specifications

► CONTACT BLOCKS

Screw and plug-in connection characteristics	Data		Standards																																				
▶ Rated insulation voltage	690 V AC 600 V AC		IEC/EN 60947-1 UL 508																																				
▶ NC contacts	Positive opening		IEC/EN 60947-5-1																																				
▶ Rated impulse voltage U _{imp} Pollution degree	6kV 3																																						
▶ Conventional thermal current in free air conditions	AC15: 10 A DC13: 2.5 A		IEC 60947-5-1																																				
▶ Electrical ratings	<div><div>Alternating current AC15 - A 600 U_e = 120 V, I_e = 6 A U_e = 240 V, I_e = 3 A U_e = 380 V, I_e = 1.9 A U_e = 480 V, I_e = 1.5 A U_e = 500 V, I_e = 1.4 A U_e = 600 V, I_e = 1.2 A Minimum operating current - standard blocks U_e = 24 V DC and I_e = 5 mA Failure rate < 10⁻⁸ UL508 Alternating Current 50/60Hz - A600 Continuous Current - 10 amps Rated Voltage - 600Vac</div><div>Direct current DC13 - Q 600 U_e = 125 V, I_e = 0.55 A U_e = 250 V, I_e = 0.27 A U_e = 400 V, I_e = 0.15 A U_e = 500 V, I_e = 0.13 A U_e = 600 V, I_e = 0.1 A - gold plated contacts U_e = 5 V DC and I_e = 1 mA Failure rate < 10⁻⁸ Direct Current - Q600 Continuous Current - 2.5 amps Rated Voltage - 600Vdc</div></div> <table><tr><th>Voltage</th><th>Max. Amps Make</th><th>Max. Amps Break</th><th>Voltage</th><th>Max. Amps Make</th><th>Max. Amps Break</th></tr><tr><td>72</td><td>60</td><td>10</td><td>24</td><td>2.5</td><td>2.5</td></tr><tr><td>120</td><td>60</td><td>6.0</td><td>125</td><td>0.55</td><td>0.55</td></tr><tr><td>240</td><td>30</td><td>3.0</td><td>250</td><td>0.27</td><td>0.27</td></tr><tr><td>480</td><td>15</td><td>1.5</td><td>301-600</td><td>0.10</td><td>0.10</td></tr><tr><td>600</td><td>12</td><td>1.2</td><td></td><td></td><td></td></tr></table>		Voltage	Max. Amps Make	Max. Amps Break	Voltage	Max. Amps Make	Max. Amps Break	72	60	10	24	2.5	2.5	120	60	6.0	125	0.55	0.55	240	30	3.0	250	0.27	0.27	480	15	1.5	301-600	0.10	0.10	600	12	1.2				IEC 60947-5-1
Voltage	Max. Amps Make	Max. Amps Break	Voltage	Max. Amps Make	Max. Amps Break																																		
72	60	10	24	2.5	2.5																																		
120	60	6.0	125	0.55	0.55																																		
240	30	3.0	250	0.27	0.27																																		
480	15	1.5	301-600	0.10	0.10																																		
600	12	1.2																																					
▶ Electrical operating life	<div><div>1 million cycles for: - AC15 - B 300 U_e = 120 V, I_e = 3 A U_e = 240 V, I_e = 1.5 A</div><div>- DC13 - R 300 U_e = 125 V, I_e = 0.22 A U_e = 250 V, I_e = 0.1 A</div></div>																																						
▶ Applicable wire sizes	Rigid or flexible wire without ferrule: 0.5 mm ² to 2 x 2.5 mm ² Rigid or flexible wire with ferrule: 0.5 mm ² to 2 x 1.5 mm ²																																						

Technical Specifications

▶ CONTACT BLOCKS

Faston connection	Data		Standards			
▶ Rated insulation voltage	320 V AC 300 V AC		IEC/EN60947-1 UL 508			
▶ NC contacts	Positive opening		IEC/EN 60947-5-1			
▶ Rated impulse withstanding voltage Uimp Pollution degree	6 kV 3					
▶ Conventional thermal current in free air conditions	AC 15: 10 A DC 13: 2.5 A		IEC 60947-5-1			
▶ Electrical ratings	Alternating current AC15 - A 300 Ue = 120 V, Ie = 6 A Ue = 240 V, Ie = 3 A Minimum current of use Ue = 24 V DC and Ie = 5 mA Failure rate < 10 ⁻⁸ UL508 Alternating Current 50/60Hz - A300 Continuous Current - 10 amps Rated Voltage - 300Vac		Direct current DC13 - Q 300 Ue = 125 V, Ie = 0.55 A Ue = 250 V, Ie = 0.27 A IEC 60947-5-1 Direct Current - Q300 Continuous Current - 2.5 amps Rated Voltage - 300Vdc			
	Voltage	Max. Amps Make	Max. Amps Break	Voltage	Max. Amps Make	Max. Amps Break
	72	60	10	24	2.5	2.5
	120	60	6.0	125	0.55	0.55
	240	30	3.0	250	0.27	0.27
▶ Electrical operating life	1 million cycles for: - AC15 - B 300 Ue = 120 V, Ie = 3 A Ue = 240 V, Ie = 1.5 A		- DC13 - R 300 Ue = 125 V, Ie = 0.22 A Ue = 250 V, Ie = 0.1 A			
▶ Faston size	6.35 mm (0.25") or 2 x 2.8 mm (0.110")					

Technical Specifications

► CONTACT BLOCKS

Pin-style connection (for PCB)	Data		Standards
► Rated insulation voltage	250 V AC 250 V AC		IEC/EN60947-1 UL 508
► NC contacts	Positive opening		IEC/EN 60947-5-1
► Rated impulse withstanding voltage Uimp Pollution degree	4 kV 3		
► Conventional thermal current in free air conditions	AC 15: 5 A DC 13: 1 A		IEC 60947-5-1
► Electrical ratings	Alternating current AC 15 - B 300 Ue = 120 V, Ie = 3 A Ue = 240 V, Ie = 1.5 A	Direct current DC13 - R 300 Ue = 125 V, Ie = 0.22 A Ue = 250 V, Ie = 0.1 A	IEC 60947-5-1 IEC 60947-5-4
	Minimum current of use - standard blocks Ue = 24 V DC and Ie = 5 mA Failure rate < 10 ⁻⁸		- golden contacts Ue = 5 V DC and Ie = 1 mA Failure rate < 10 ⁻⁸
	UL508 Alternating Current 50/60Hz - B300 Continuous Current - 5 amps Rated Voltage - 300Vac		Direct Current - R300 Continuous Current - 1 amp Rated Voltage - 300Vdc
	Max. Amps Make	Max. Amps Break	Max. Amps Make
	Voltage	Voltage	Voltage
	72	30	24
	120	30	125
	240	15	250
► Electrical operating life	1 million cycles for: - AC15 - B 300 Ue = 120 V, Ie = 3 A Ue = 240 V, Ie = 1.5 A		- DC13 - R 300 Ue = 125 V, Ie = 0.22 A Ue = 250 V, Ie = 0.1 A
► Pin diameter	ø 1 mm		

Technical Specifications

▶ LED BLOCKS FOR ILLUMINATED HEADS

Characteristics	Data	Standards
▶ Rated insulation voltage	300 V	IEC/EN 60947-5-1
▶ Rated impulse voltage Uimp Pollution degree	4 kV (with filter block see p. 70) 3	IEC/EN 60947-1
▶ Operating voltage	12 to 24 V AC/DC 48 V AC/DC (for LED block) 130 V AC 230 V AC	
▶ Frequency	50 or 60 Hz	
▶ Lifetime at rated supply voltage	Red and yellow: 100 000 hours at 25 °C Other colors: 50 000 hours at 25 °C	
▶ Consumption of LED blocks	Voltage: - 24 V: 25 mA ± 20% - 48 V: 15 mA ± 5% - 130 V: 20 mA ± 10% - 230 V: 16 mA ± 30%	

▶ ONE PIECE PILOT LIGHT BA9S

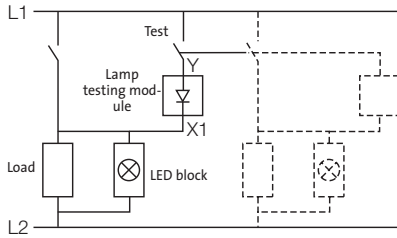
Characteristics	Data	
▶ Rated insulation voltage	400 V	IEC 60947-5-1
▶ Rated impulse withstand voltage Uimp	4 kV	IEC/EN 60947-1
▶ Bulb rating	400 V max. - 2.6 W max. 240 V max. - 2.6 W max.	IEC 60947-5-1 UL 508

Technical Specifications

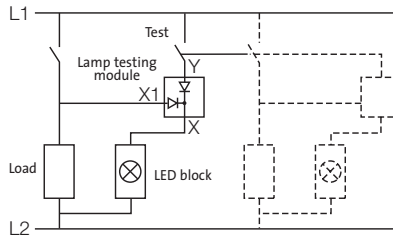
► DIAGRAMS

PUSH-TO-TEST LED PILOT LIGHT DIAGRAMS

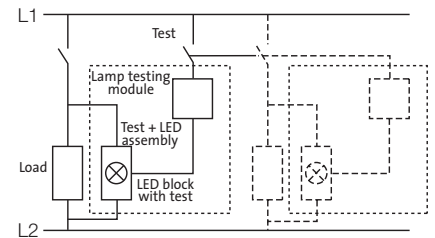
Lamp-testing module with
1 diode (33ET) for direct
supply 24 V and 48 V



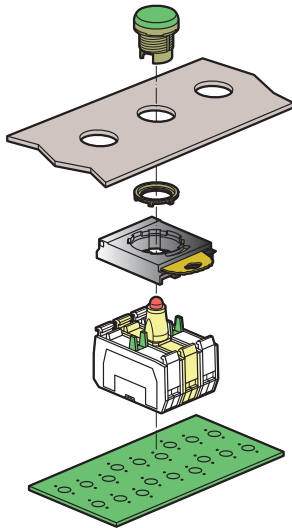
Lamp-testing module with
2 diodes (33ETT) for direct
supply 24 V and 48 V



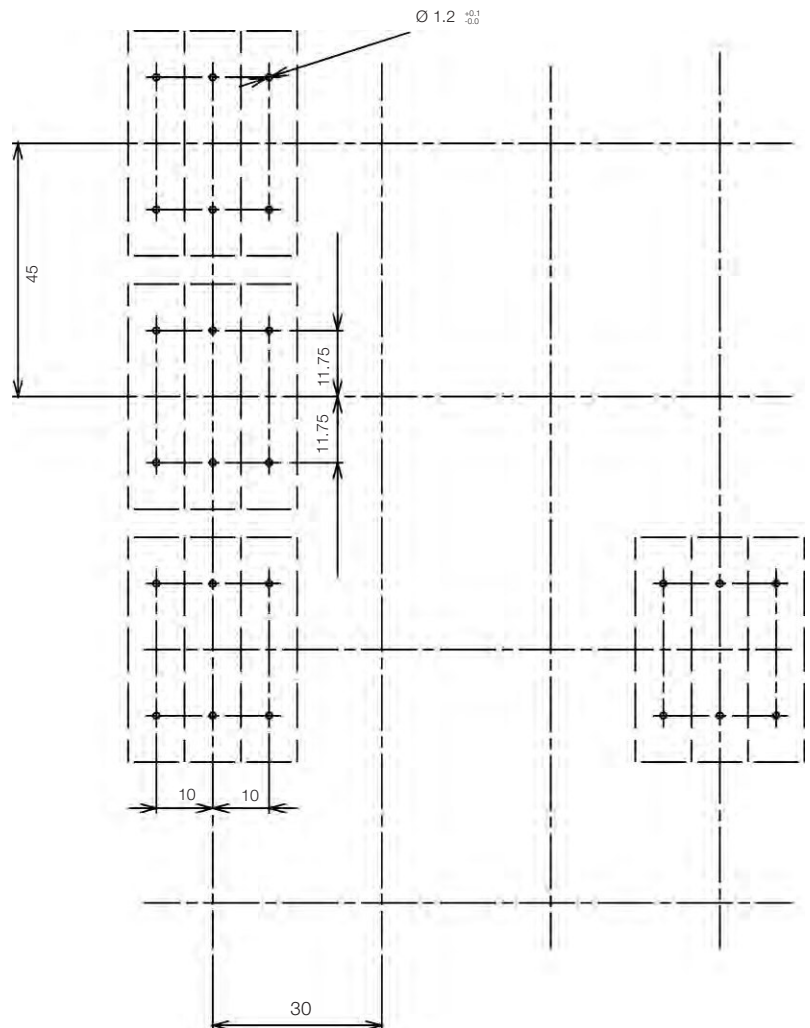
Lamp-testing assembly
for direct supply 130 V and 240 V



PRINTED CIRCUIT BOARD MOUNTING



PCB BOARD DRILL PLAN



PCB TERMINAL - SINGLE CLIP

PCB TERMINAL - 3 POSITION CLIP

