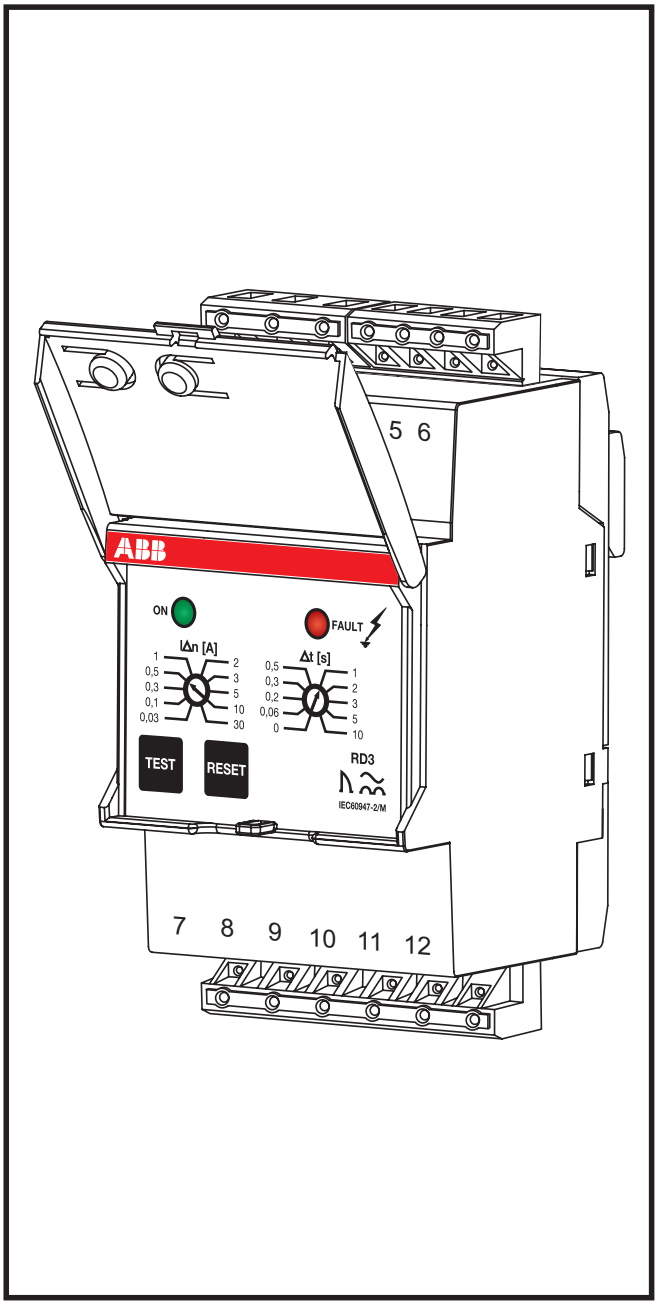
RD3
RD3-48

2CSF423005D1002



(I) Relè differenziale elettronico

(GB) Electronic residual current relay

(D) Elektronisches Differentialschutzrelais

(F) Relais differentiel électronique

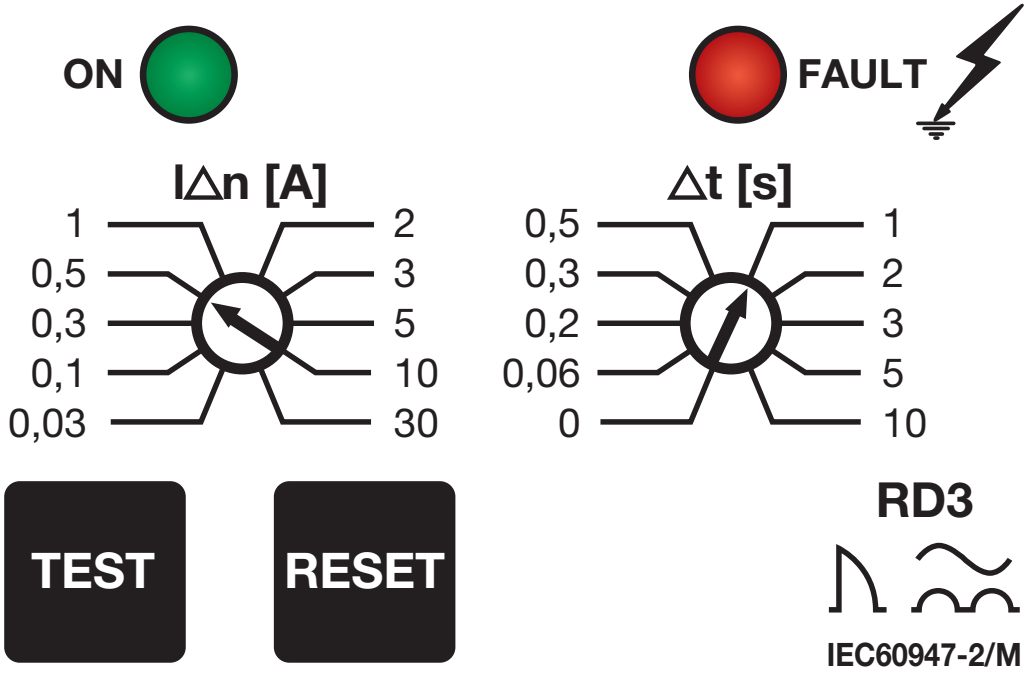
(E) Relé diferencial electrónico

CE

ABB

Descrizione

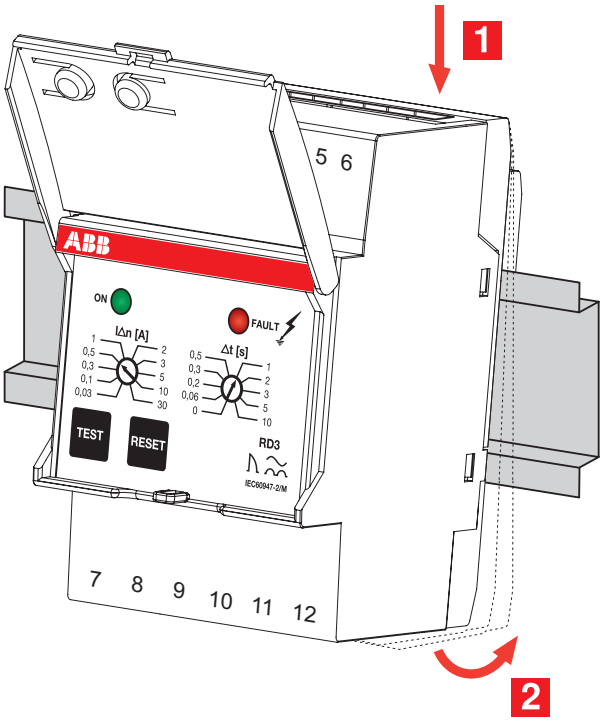
Il dispositivo RD3 della famiglia dei relè differenziali elettronici RD3 di ABB svolge la funzione di monitor e protezione differenziale in accordo alla CEI EN 60947-2 annex. M* e può essere impiegato in abbinamento a tutti i dispositivi automatici S200 e scatolati della gamma Tmax fino al T5, per impianti industriali.
La gamma dei relè differenziali RD3 può svolgere la funzione di segnalazione attraverso i due contatti d'uscita.

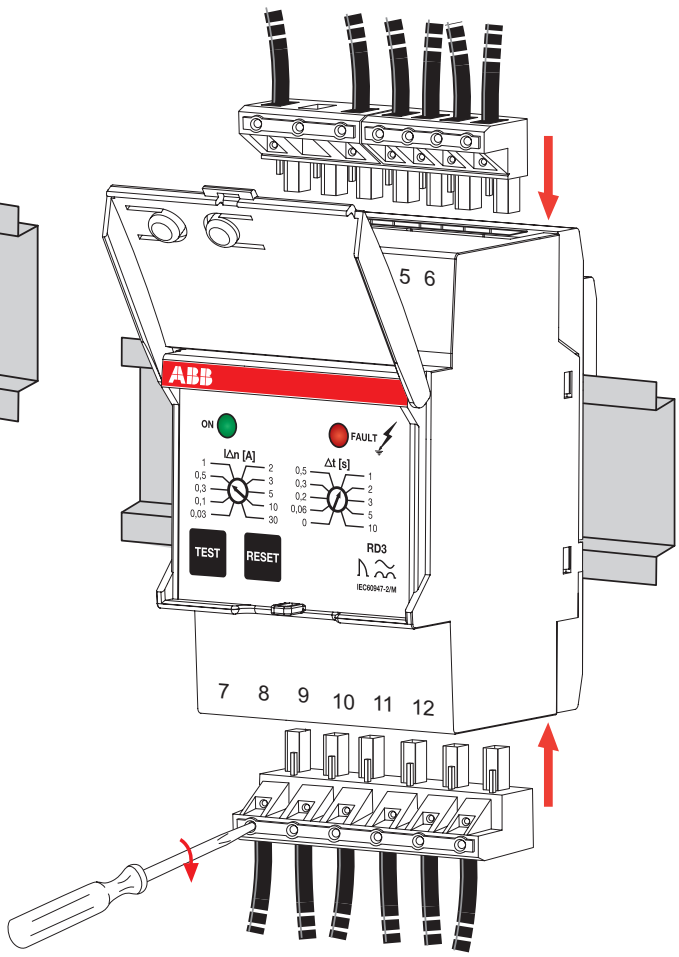


*Fino a 630A

3B_76x88mm_RD3_rev4.indd 2 19/09/11 11:00

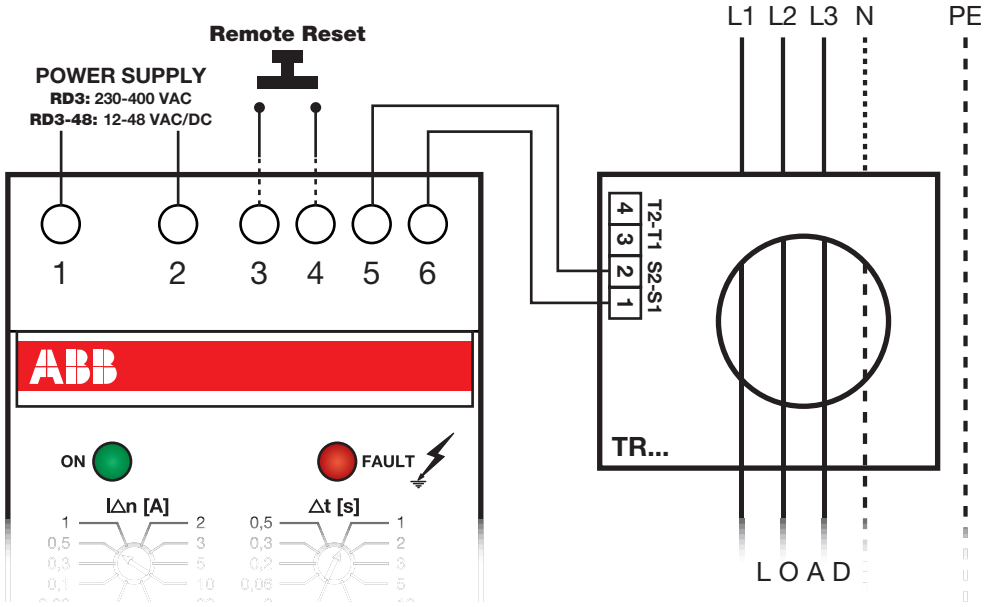
Installazione



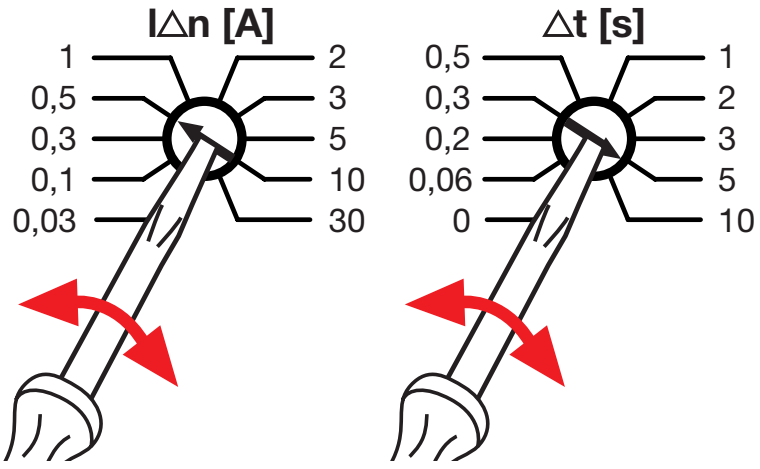


3B_76x88mm_RD3_rev4.indd 3 19/09/11 11:00

Collegamento Toroide-Relè



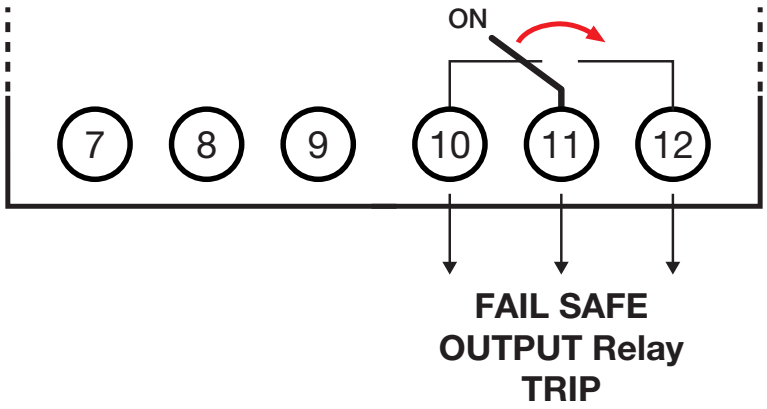
Regolazione della corrente d'intervento differenziale (IΔn [A]) e del tempo d'intervento (Δt [s]).



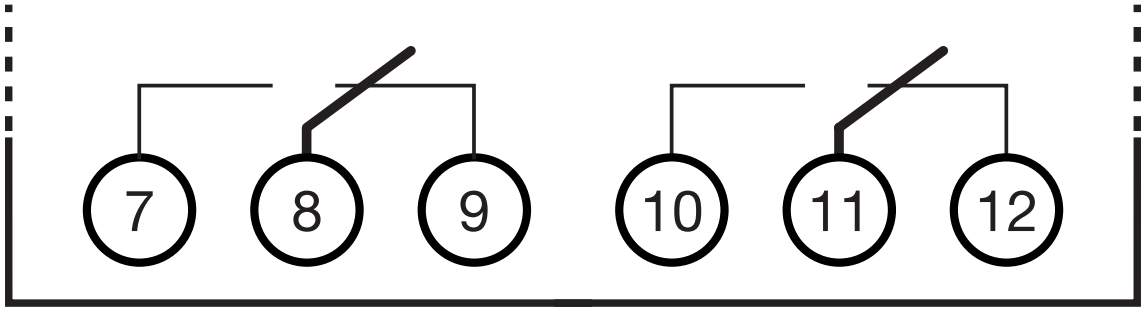
3B_76x88mm_RD3_rev4.indd 4 19/09/11 11:00

Funzioni

Fail-safe → integrata nel dispositivo (sicurezza positiva). In caso di mancanza dell'alimentazione del dispositivo RD3 i contatti di output numerati 10 11 12 commuteranno come da immagine allegata.

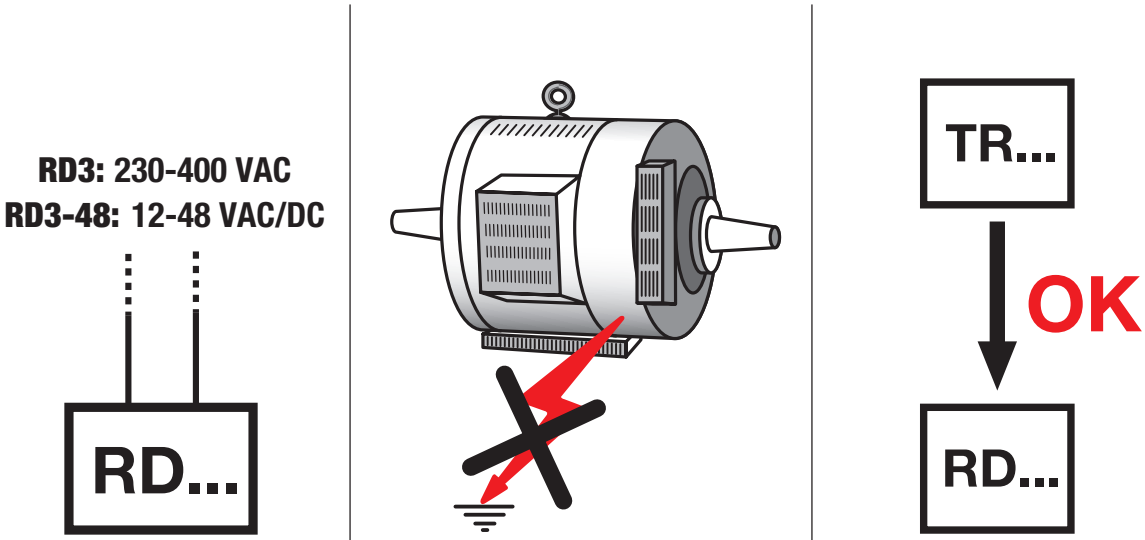


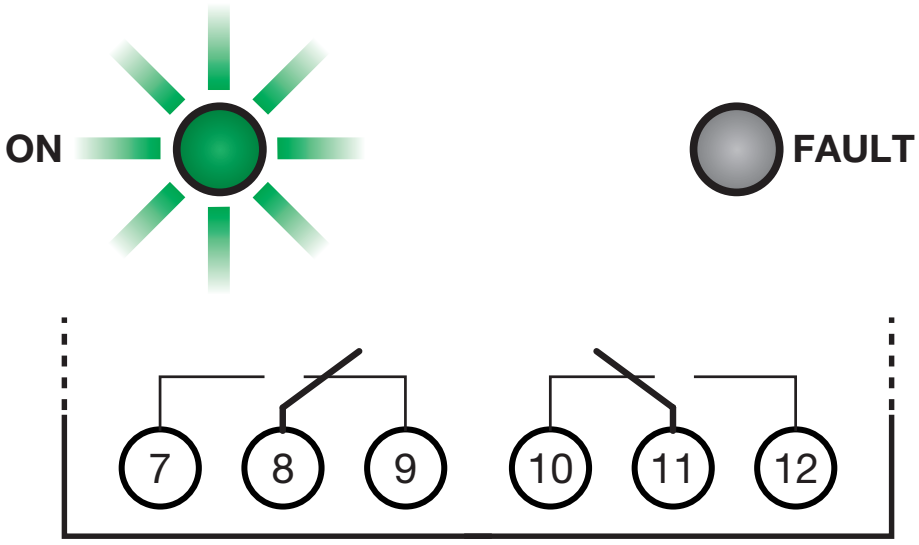
Contatti in condizione di dispositivo spento:



3B_76x88mm_RD3_rev4.indd 5 19/09/11 11:00

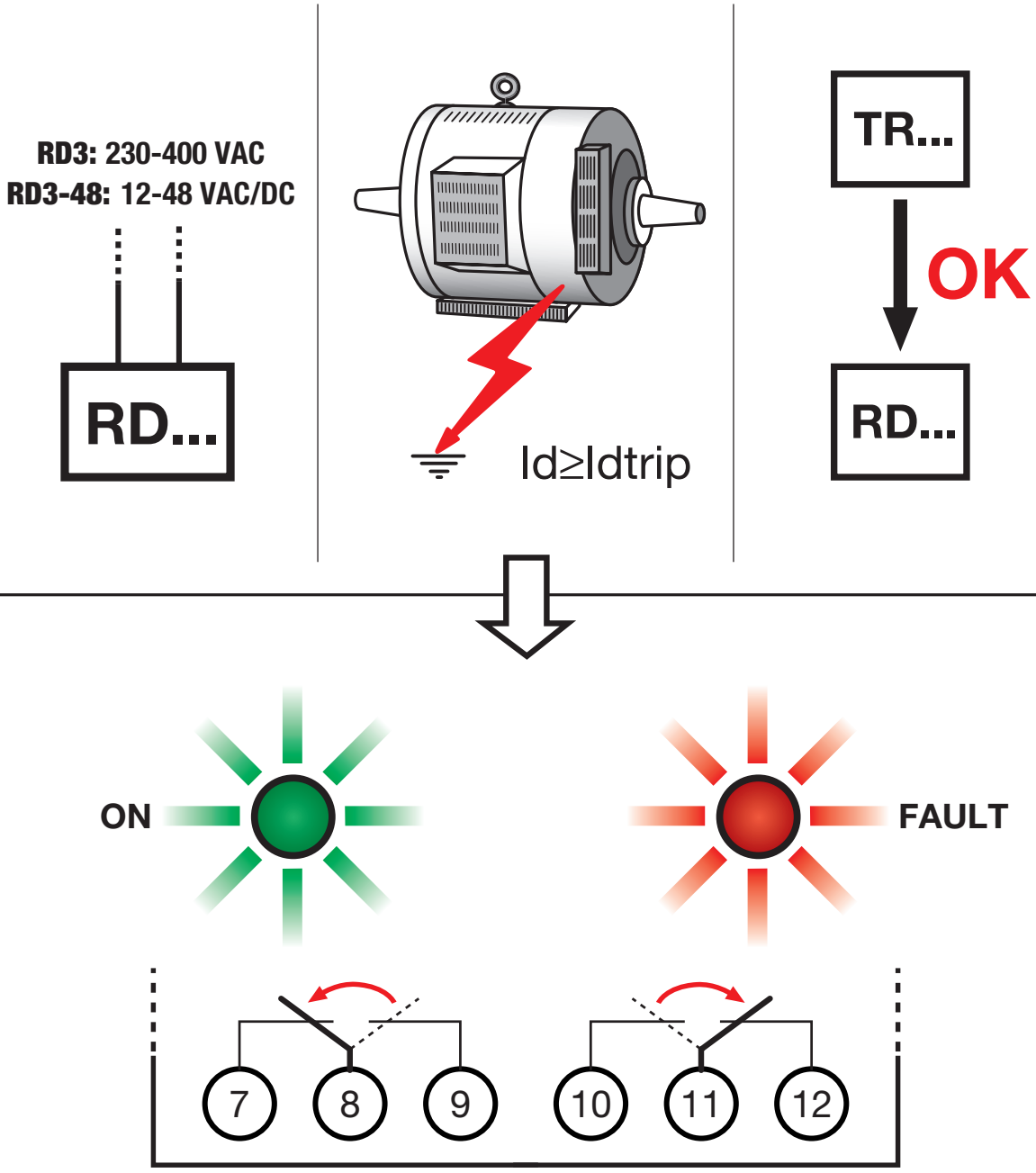
Segnalazioni stand by





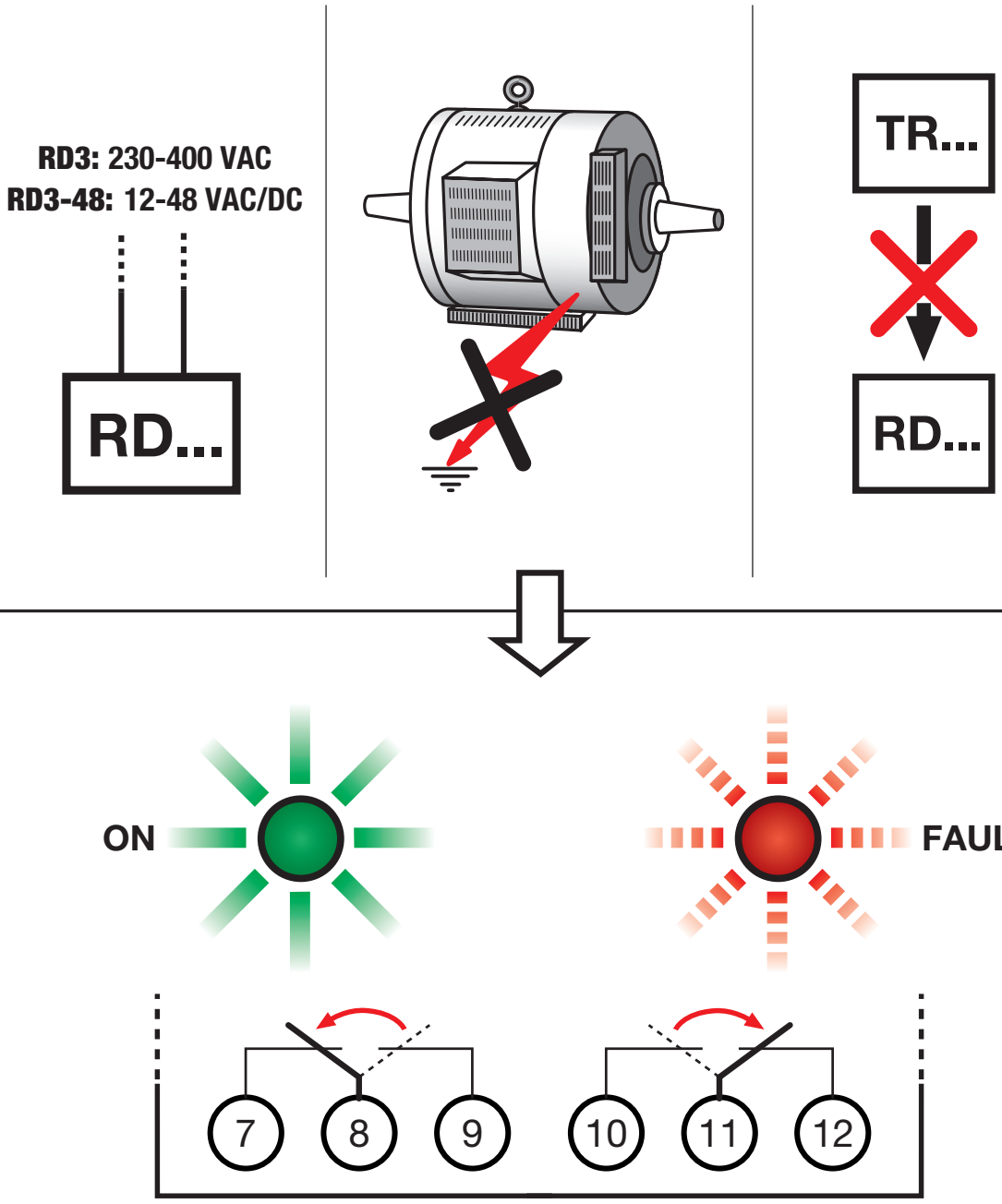
3B_76x88mm_RD3_rev4.indd 6 19/09/11 11:00

Segnalazioni guasto



3B_76x88mm_RD3_rev4.indd 7 19/09/11 11:00

Segnalazioni mancanza collegamento TR

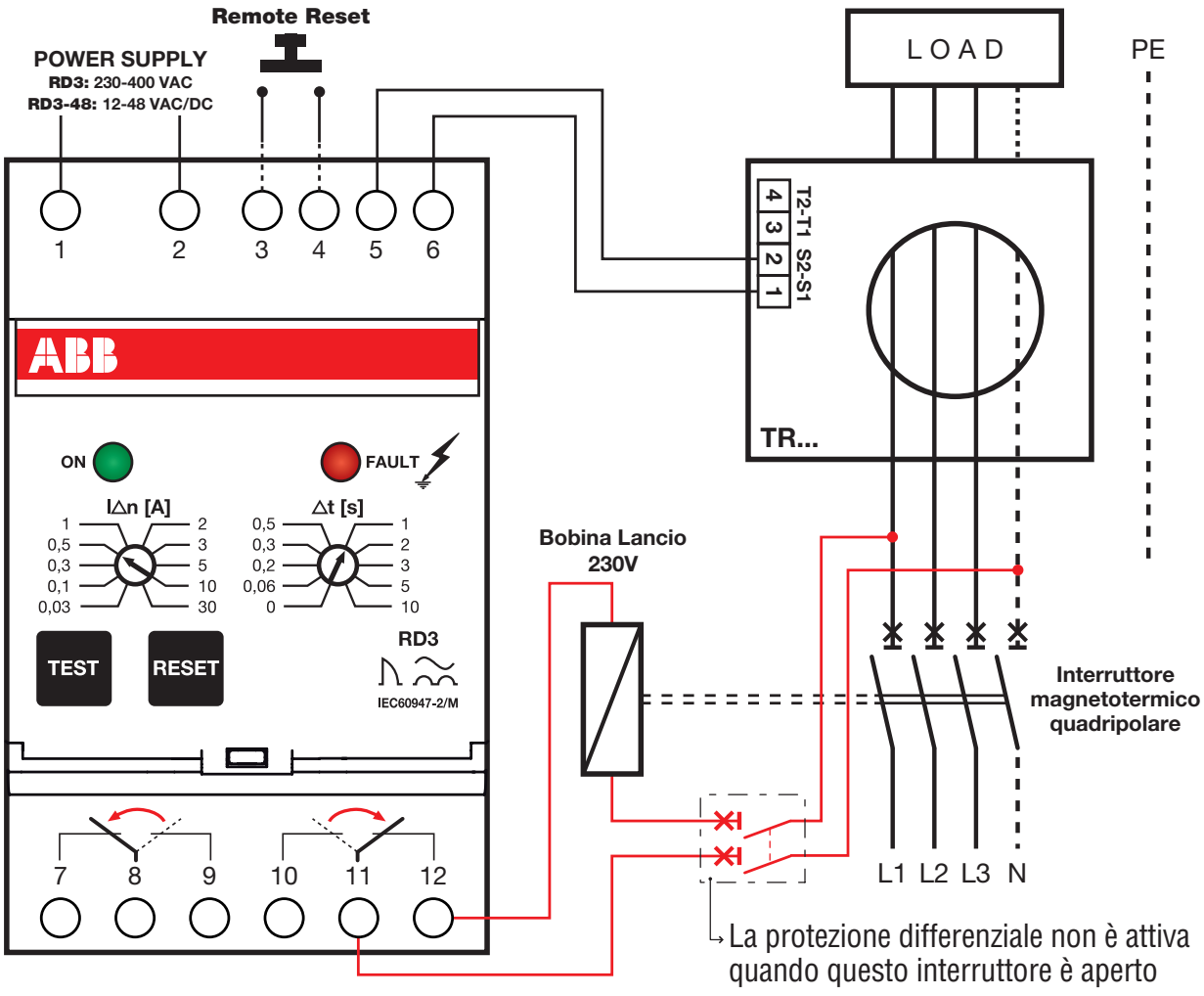


3B_76x88mm_RD3_rev4.indd 8 19/09/11 11:00

Situazione di guasto

Quando il valore della corrente differenziale, rilevata dal trasformatore toroidale è superiore alla soglia I∆n, il relè RD3 provoca l'apertura dell'interruttore automatico a cui è collegato attraverso una bobina di sgancio.

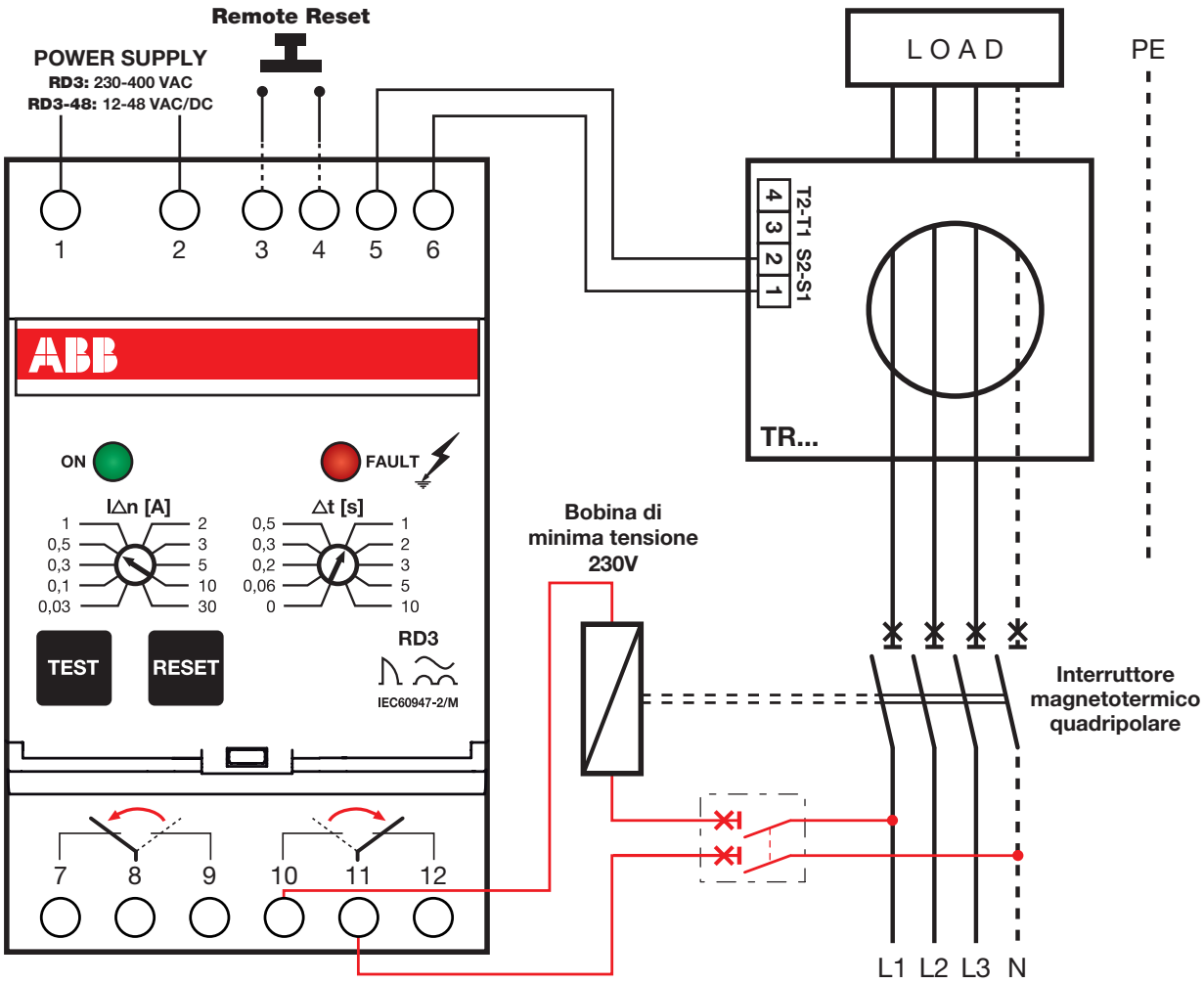
Collegamento con bobina a lancio di corrente:



3B_76x88mm_RD3_rev4.indd 9 19/09/11 11:00

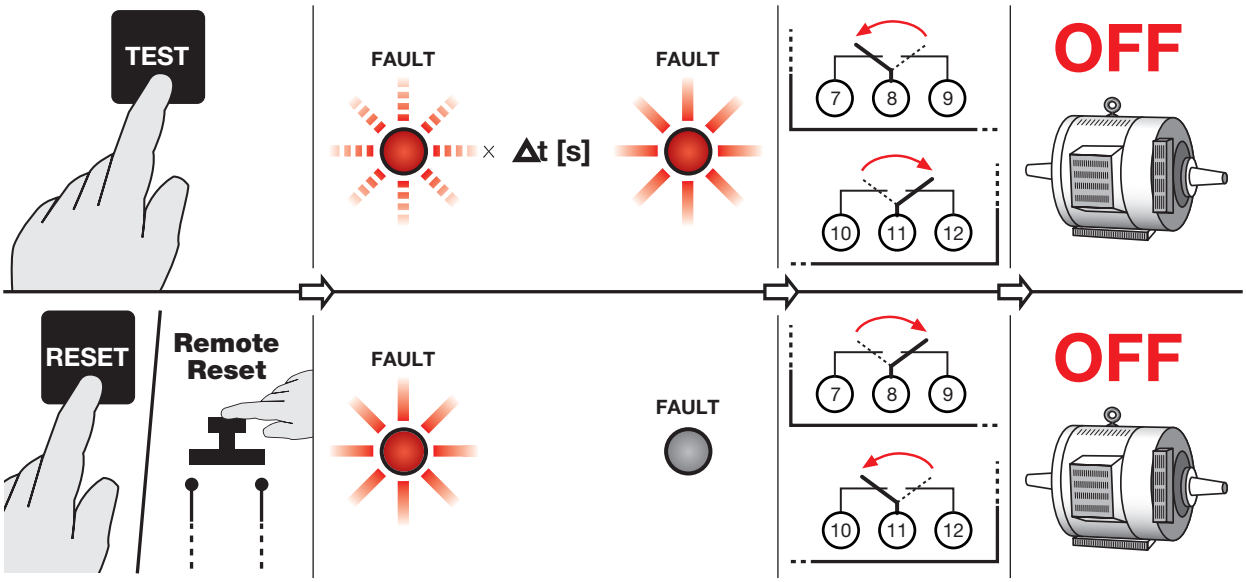
Situazione di guasto

Collegamento con bobina di minima tensione:



3B_76x88mm_RD3_rev4.indd 10 19/09/11 11:00

Test



3B_76x88mm_RD3_rev4.indd 11 19/09/11 11:00

Caratteristiche tecniche

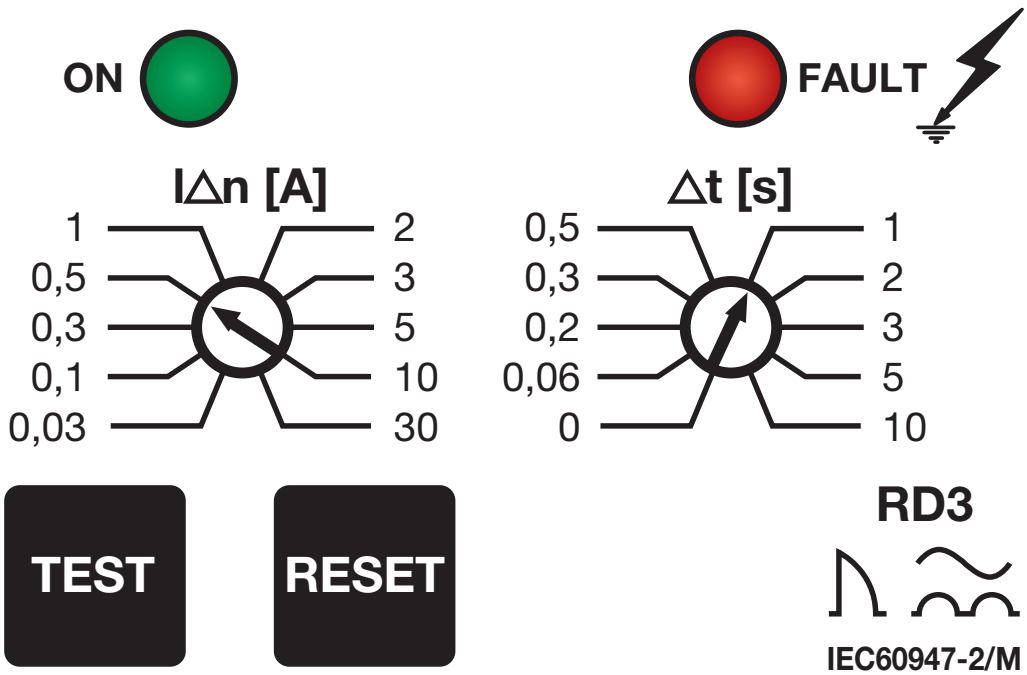
Tensione di alimentazione RD3	230-400 Vac +10% / -15%
Tensione di alimentazione RD3-48	12-48 Vac/Vdc +10% / -15%
Frequenza di alimentazione RD3 / RD3-48	50-60 Hz
Tipo	A (fino a $I_{\Delta n}$ = 5 A)
Temperatura di funzionamento	-25 °C ... +70 °C
Potenza max assorbita RD3	<3,6 W
Potenza max assorbita RD3-48	<600 mW
Regolazione soglia d'intervento $I\Delta n$	0,03-0,1-0,3-0,5-1-2-3-5-10-30
Regolazione soglia d'intervento Δt	0-0,06-0,2-0,3-0,5-1-2-3-5-10
Resistenza max collegamento toroide-relè	3 Ω
Lunghezza max collegamento pulsante remoto-reset	15 m
Portata dei contatti d'uscita	8 A 250 Vac
Max sezione cavi morsetti	2,5 mm^2
Moduli	3
Dimensioni	52,8 × 85 × 64,7 [mm]
Grado di protezione	IP 20
Norma di riferimento	IEC 60947-2 annex.M

3B_76x88mm_RD3_rev4.indd 12 19/09/11 11:00

Description

GB

The RD3 device is part of ABB's RD3 family of residual current relays and provides residual current monitoring and protection in compliance with annex M to the CEI EN 60947-2 standard* and can be used in combination with all MCBs S200 and moulded-case devices in the Tmax range up to T5 for industrial plants.
The two output contacts of the RD3 range of residual current relays can be used for signalling.

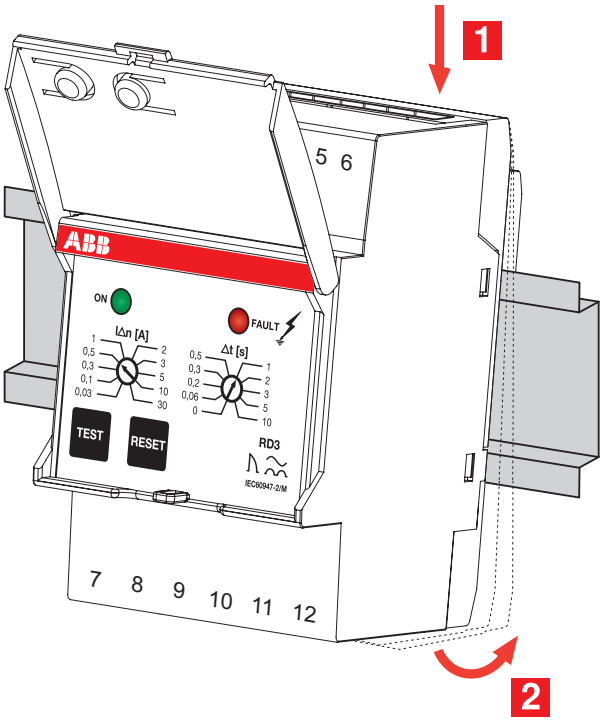


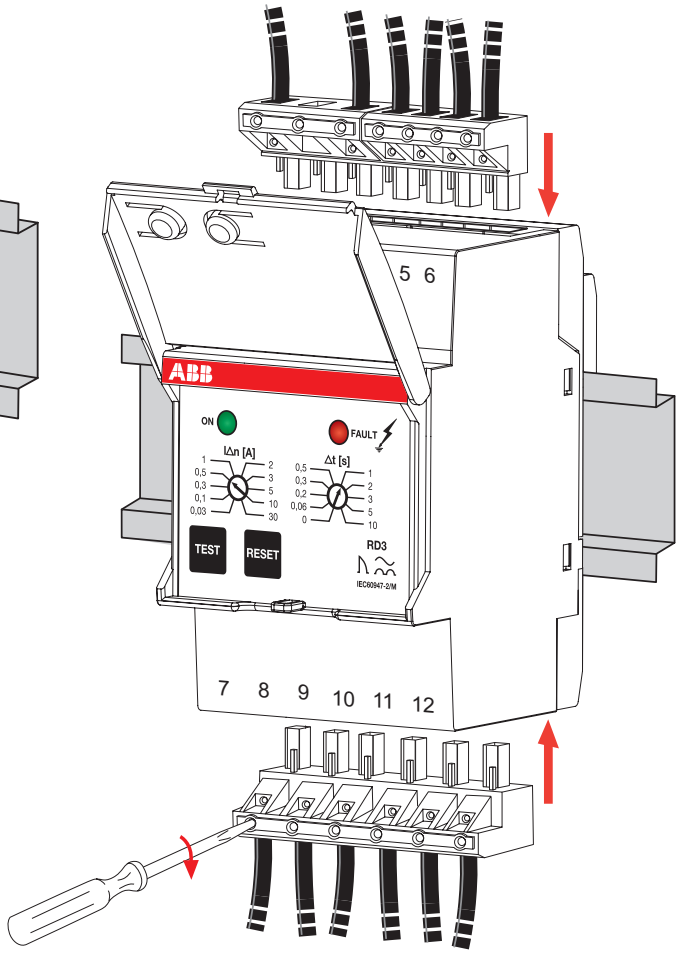
*Up to 630A

3B_76x88mm_RD3_rev4.indd 13 19/09/11 11:00

Installation

GB

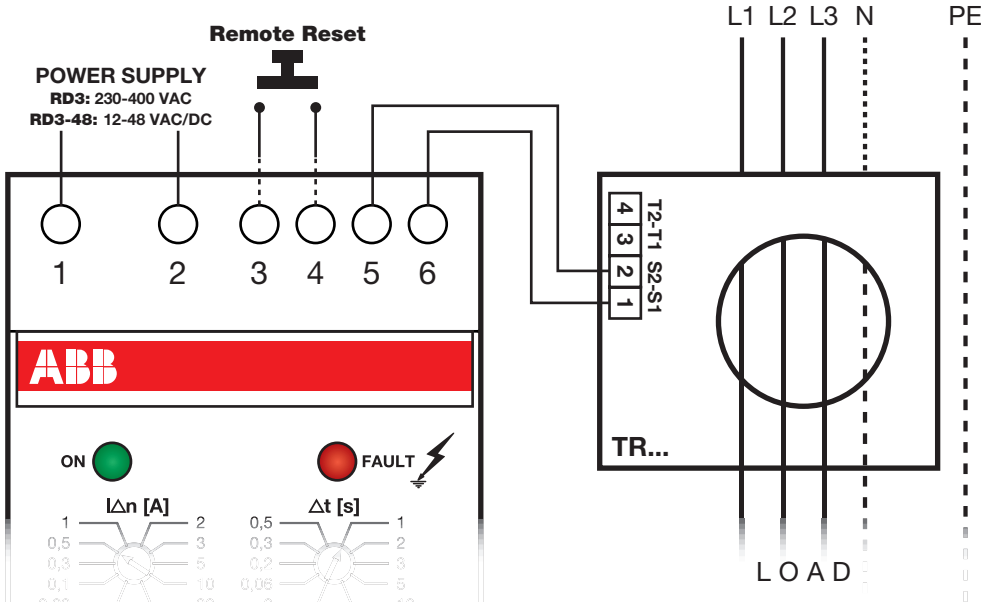




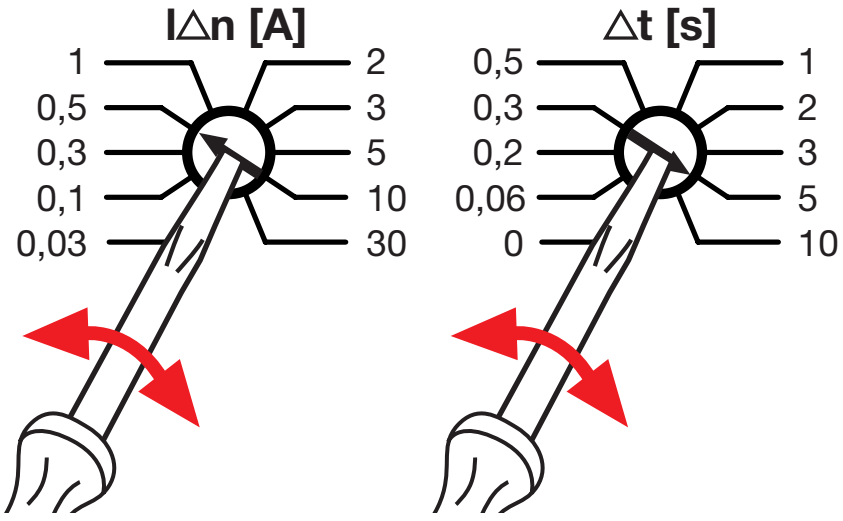
3B_76x88mm_RD3_rev4.indd 14 19/09/11 11:00

Toroid-Relay Connection

GB



Regulation of operating current (IΔn [A]) and trip time (Δt [s]).

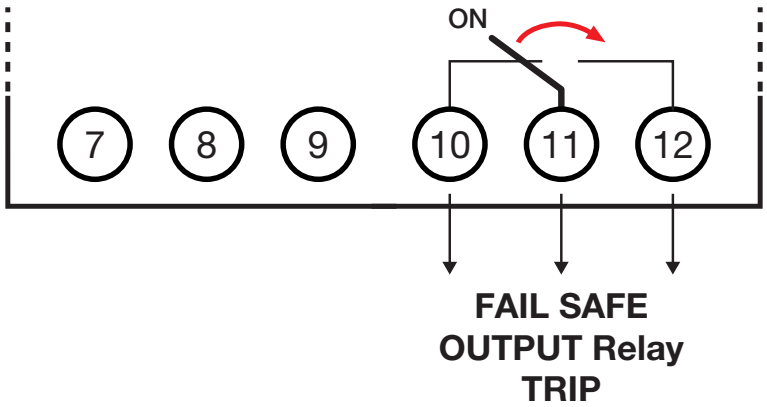


3B_76x88mm_RD3_rev4.indd 15 19/09/11 11:00

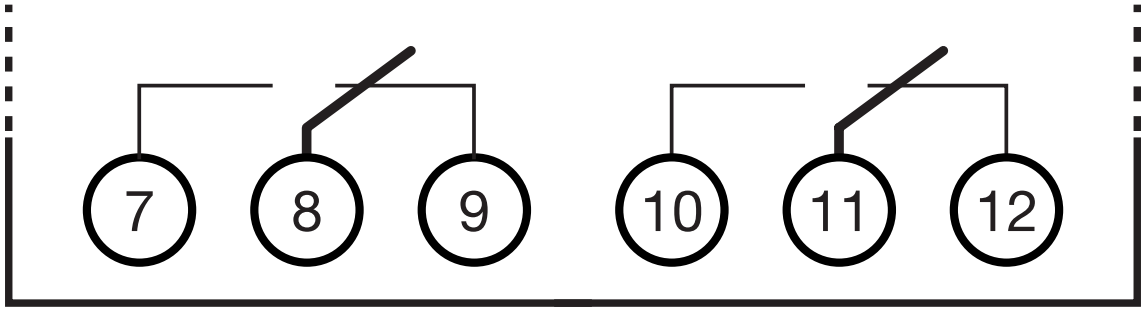
Functions

GB

Fail-safe → incorporated in the device (positive safety device) When no current is input to the RD3 device, the output contacts number 10 11 12 will switch as shown in the figure below.



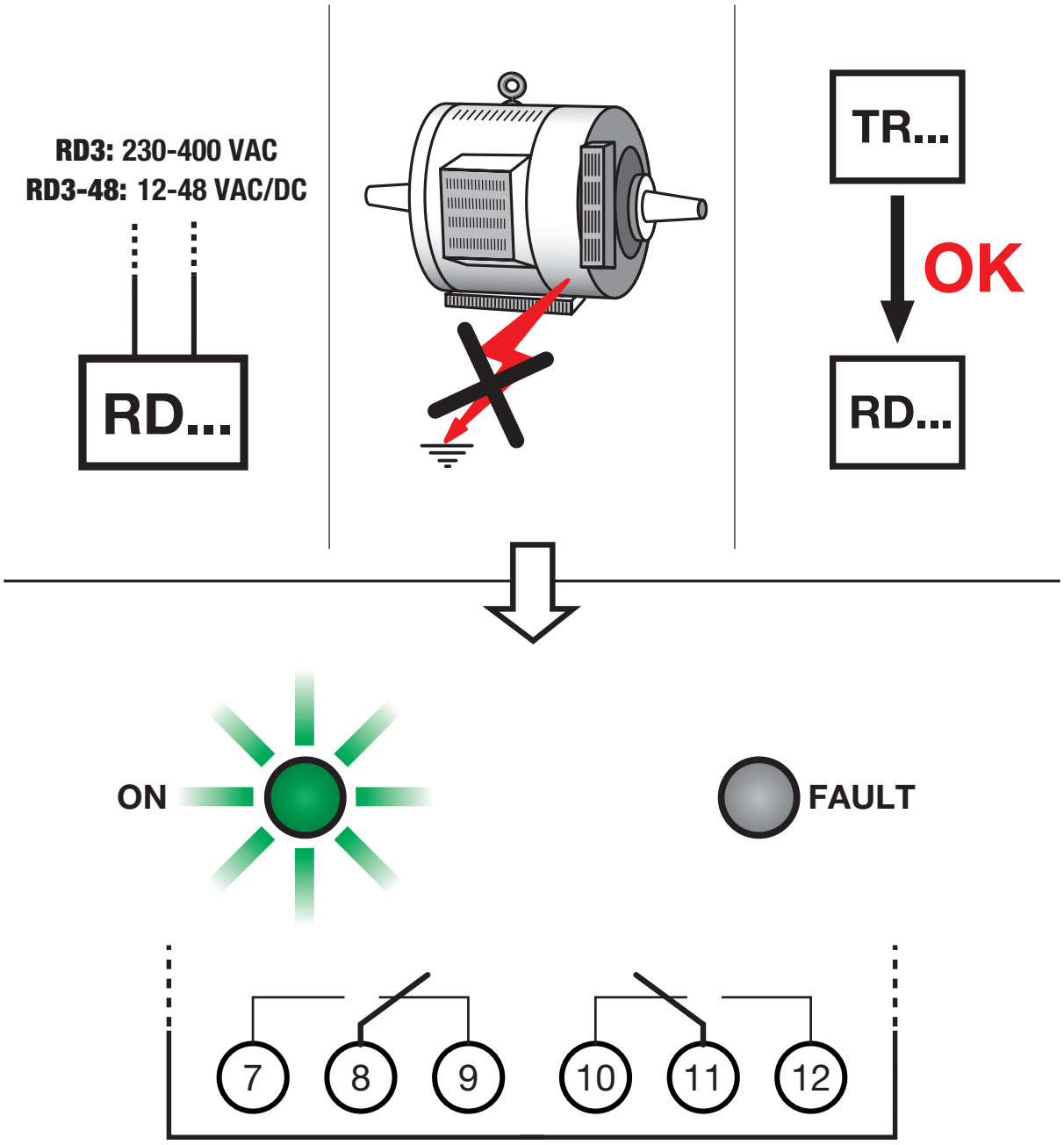
Contact status when the device is switched off:



3B_76x88mm_RD3_rev4.indd 16 19/09/11 11:00

Stand-by signals

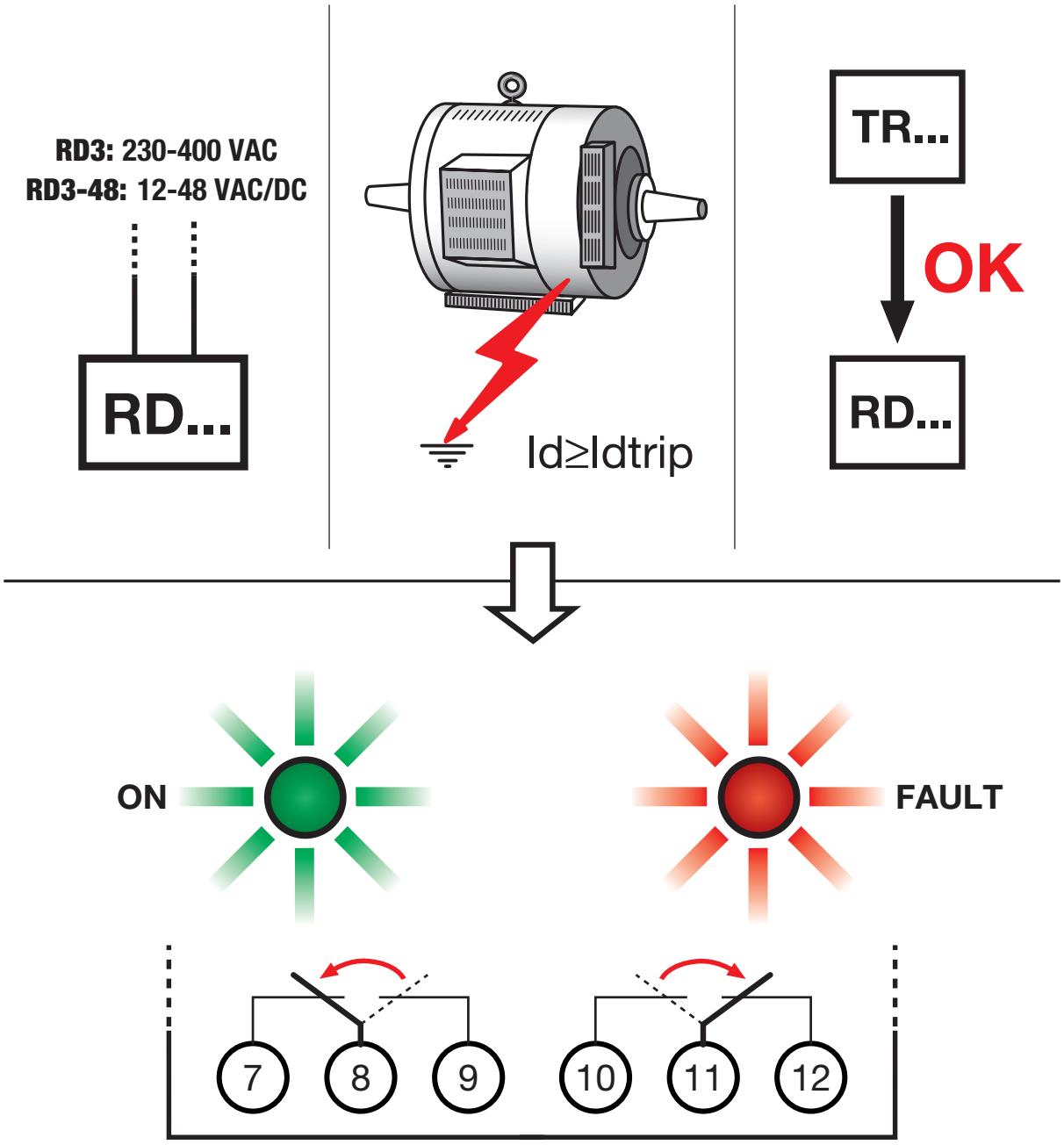
GB



3B_76x88mm_RD3_rev4.indd 17 19/09/11 11:00

Fault signal

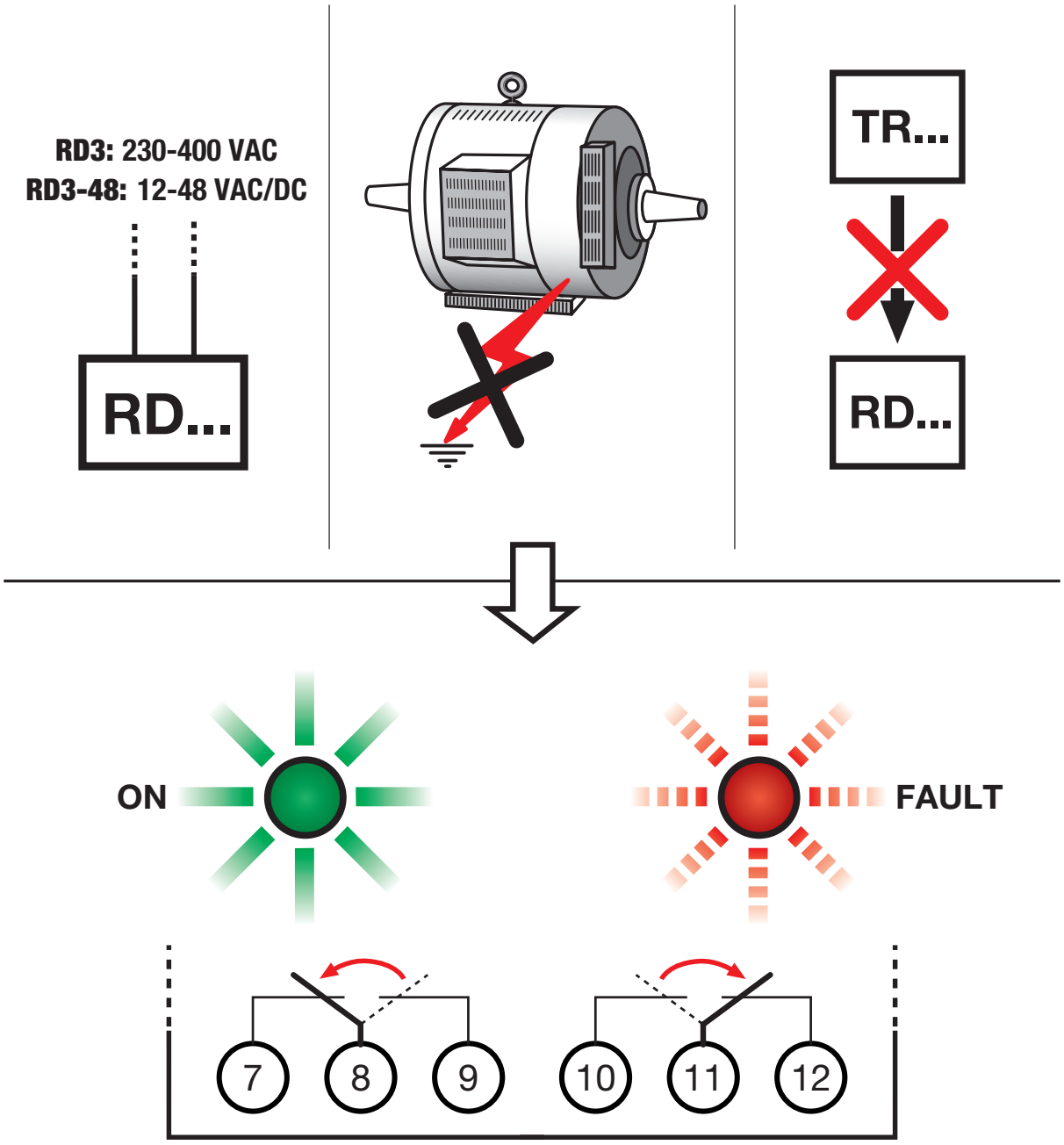
GB



3B_76x88mm_RD3_rev4.indd 18 19/09/11 11:00

No TR connection signals

GB



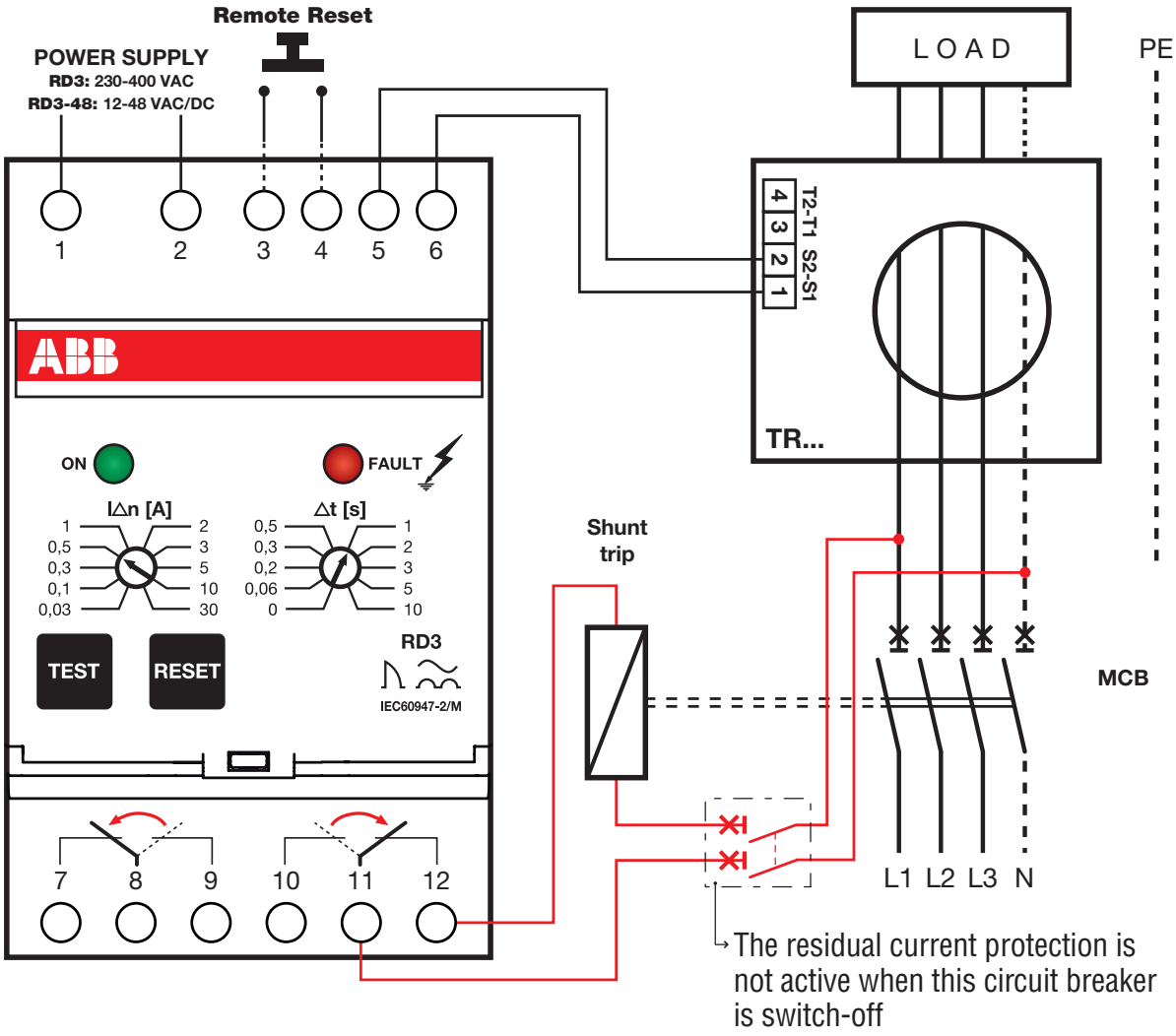
3B_76x88mm_RD3_rev4.indd 19 19/09/11 11:00

Fault status

GB

When the level of residual current, detected by the toroid, is higher than I∆n threshold, the RD3 relay causes the automatic opening of the circuit breaker to which it is connected by means of the shunt trip.

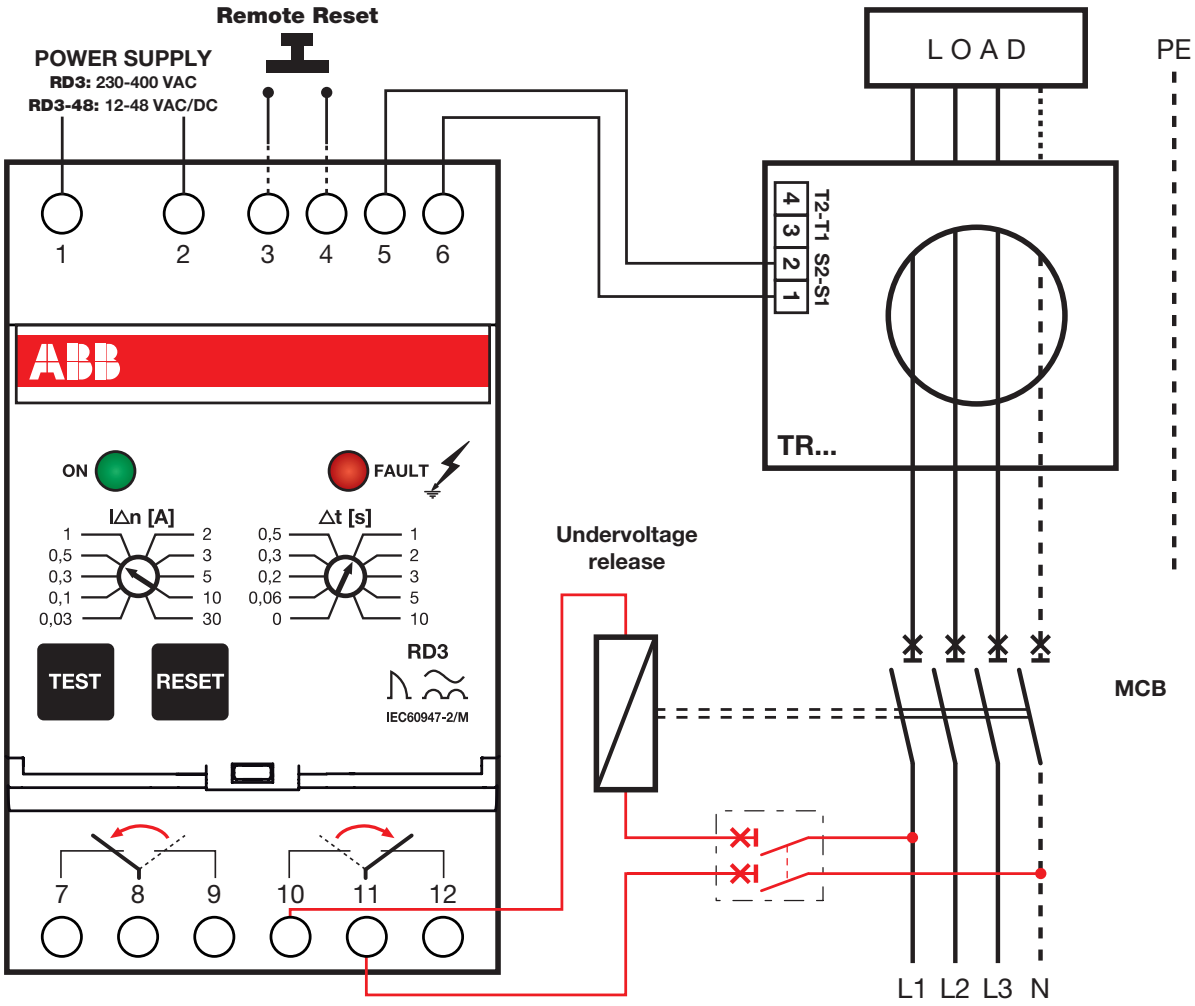
Connection with the shunt trip when the current is activated:



3B_76x88mm_RD3_rev4.indd 20 19/09/11 11:00

Fault status

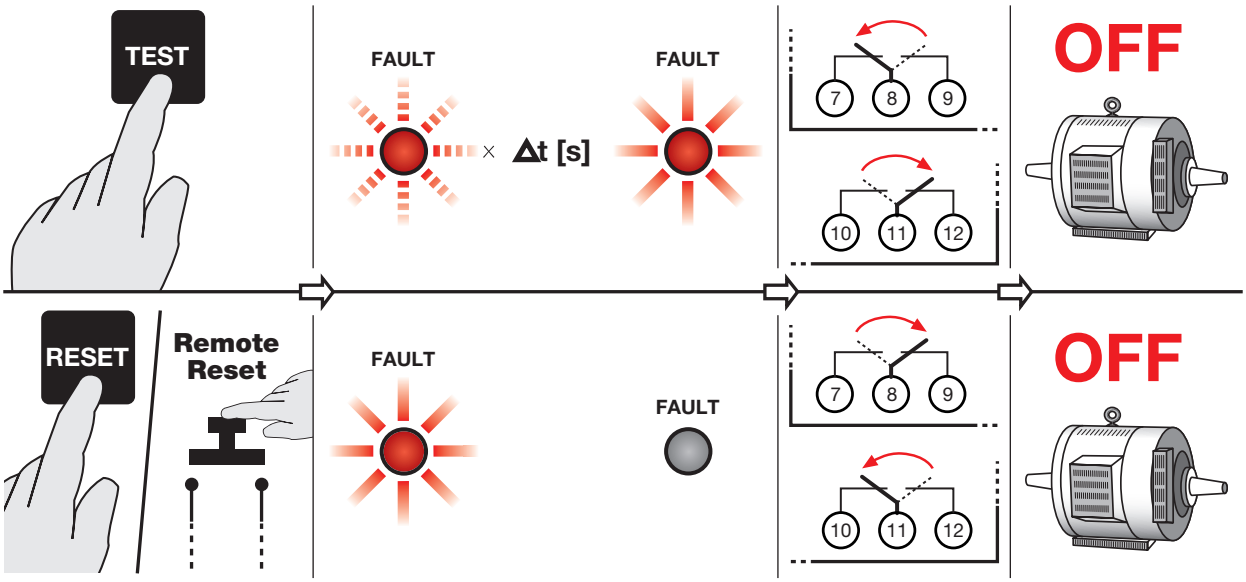
Connection to the undervoltage release



3B_76x88mm_RD3_rev4.indd 21 19/09/11 11:00

Test

GB



3B_76x88mm_RD3_rev4.indd 22 19/09/11 11:00

Technical specifications

GB

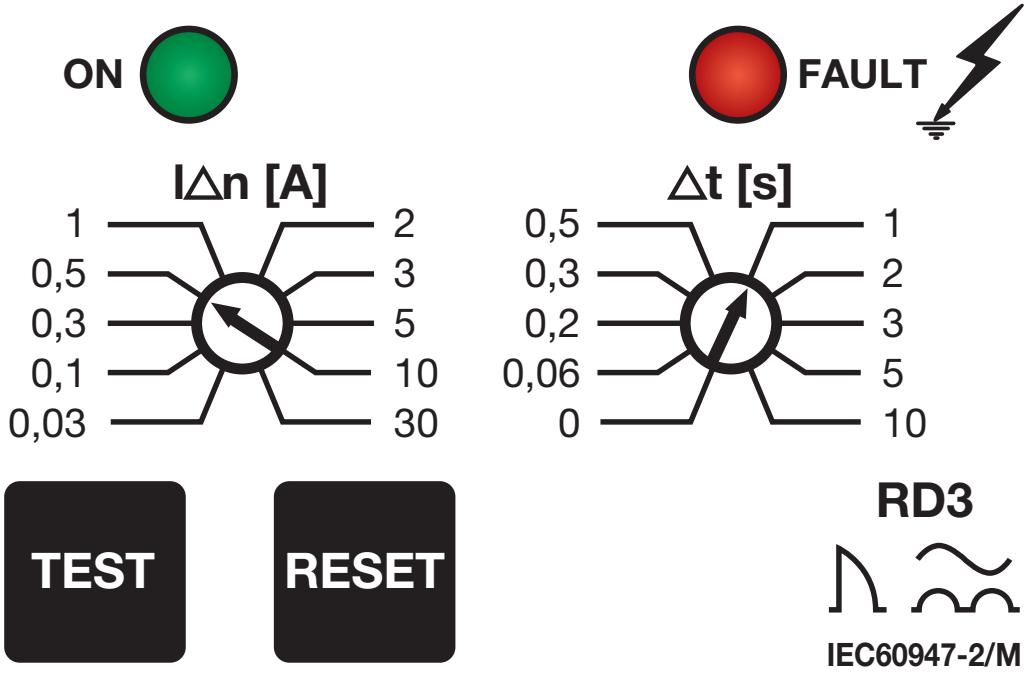
RD3 power supply voltage	230-400 VAC +10% / -15%
RD3-48 power supply voltage	12-48 VAC/VDC +10% / -15%
RD3 / RD3-48 power supply frequency	50-60 Hz
Type	A (up to $I_{\Delta n}$ = 5 A)
Operating temperature	-25 °C ... +70 °C
RD3 max power consumption	<3,6 W
RD3-48 max power consumption	<600 mW
Regulation of IΔn operating threshold	0.03-0.1-0.3-0.5-1-2-3-5-10-30
Regulation of operating threshold Δt	0-0.06-0.2-0.3-0,5-1-2-3-5-10
Max toroid-relay connection resistance	3 Ω
Max remote button-reset connection distance	15 m
Output contact capacity	8 A 250 VAC
Max terminal wire section	2.5 mm^2
Modules	3
Dimensions	52.8 × 85 × 64.7 [mm]
Protection class	IP 20
Reference standard	IEC 60947-2 annex M

3B_76x88mm_RD3_rev4.indd 23 19/09/11 11:00

Beschreibung

D

Das Modell RD3 gehört zur Produktfamilie der von ABB entwickelten elektronischen Differenzstromrelais RD3 zum Fehlerstromschutz gemäß DIN EN 60947-2, Anhang M*; es kann in Kombination mit allen Leitungs-Schutzschaltern S200 und gekapselten Leistungsschaltern der Baureihe Tmax bis T5 für Industrieanlagen eingesetzt werden. Die Meldungen des Differenzstromrelais RD3 erfolgen über zwei Ausgangskontakte.

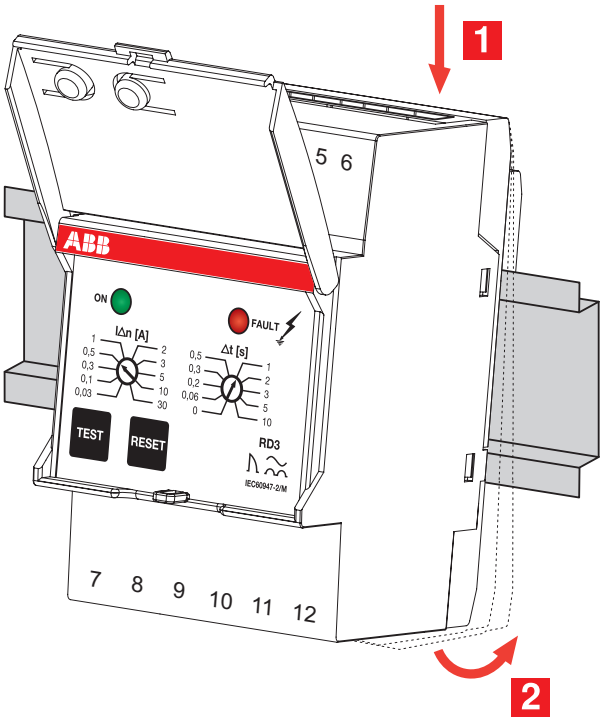


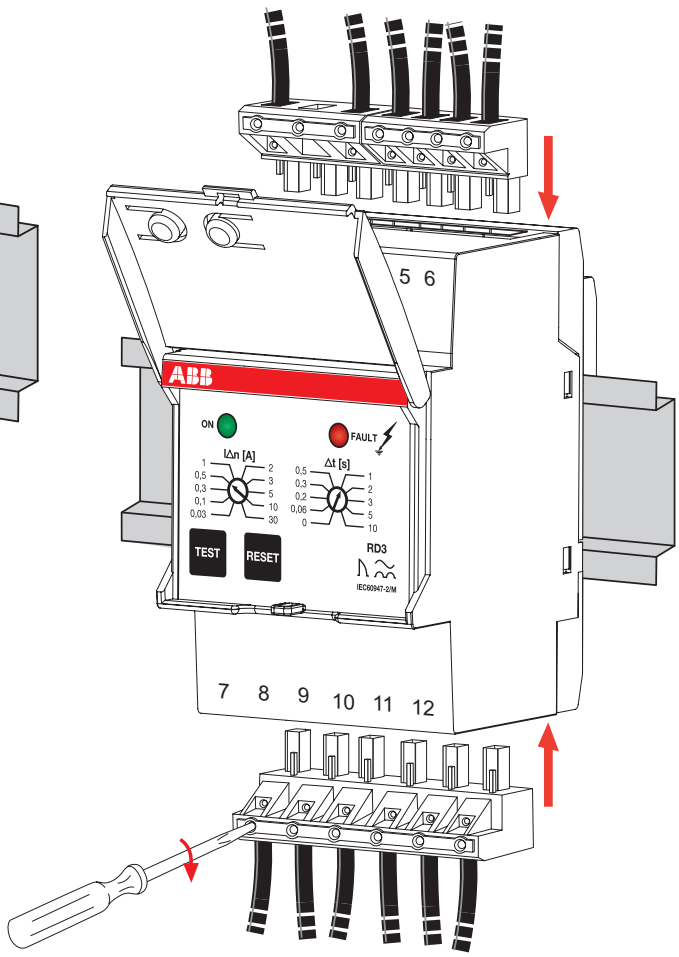
*bis 630A

3B_76x88mm_RD3_rev4.indd 24 19/09/11 11:00

Installation / Montage

D

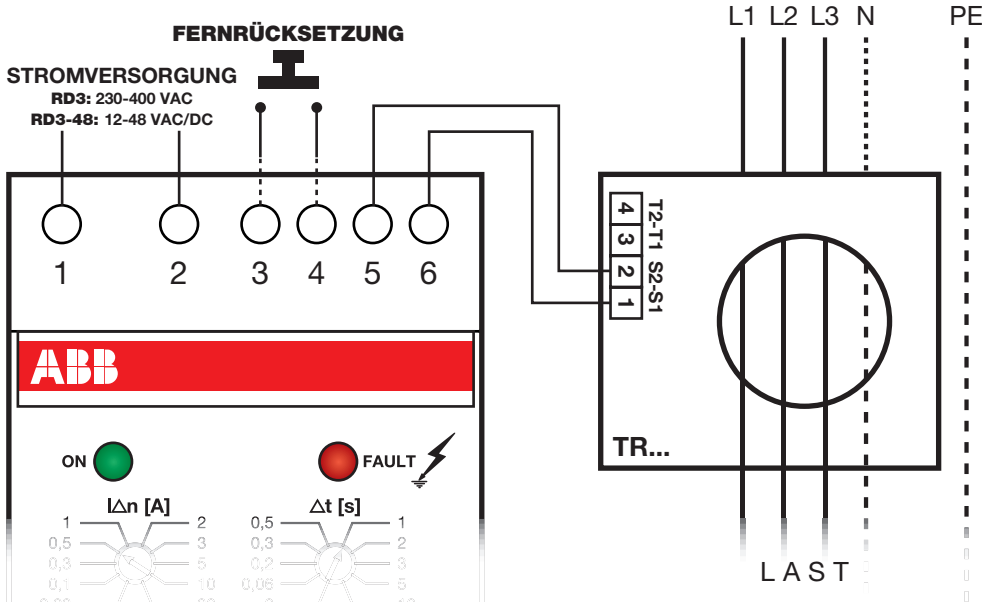




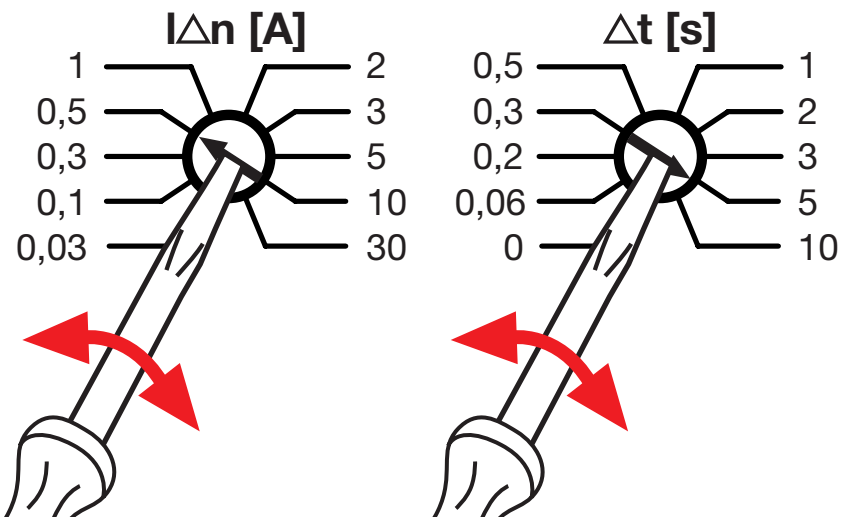
3B_76x88mm_RD3_rev4.indd 25 19/09/11 11:00

Anschluss Wandler - Relais

D



Einstellung Empfindlichkeit (IΔn [A]) und Auslösezeit (Δt [s]).

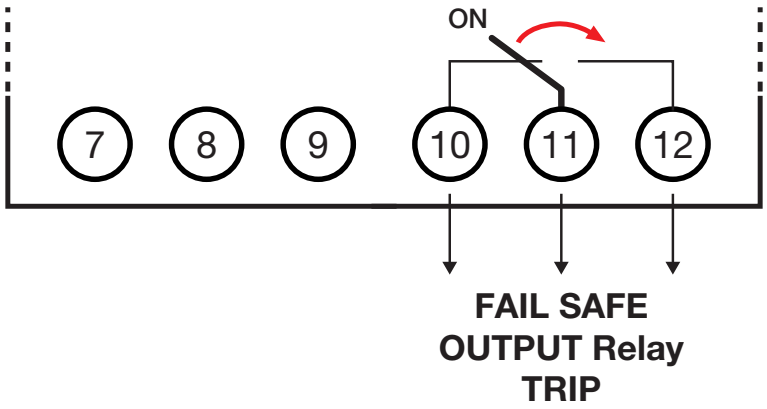


3B_76x88mm_RD3_rev4.indd 26 19/09/11 11:00

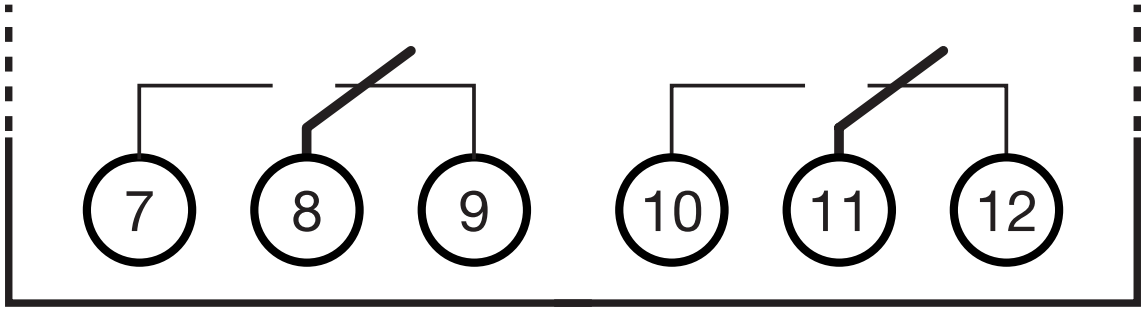
Funktionen

D

Fail-Safe-Funktion → in Einheit eingebaut (positive Sicherheitseinrichtung). Bei Ausfall der Stromversorgung des RD3 schalten die Ausgangskontakte 10, 11 und 12 wie in der beiliegenden Abbildung gezeigt um.



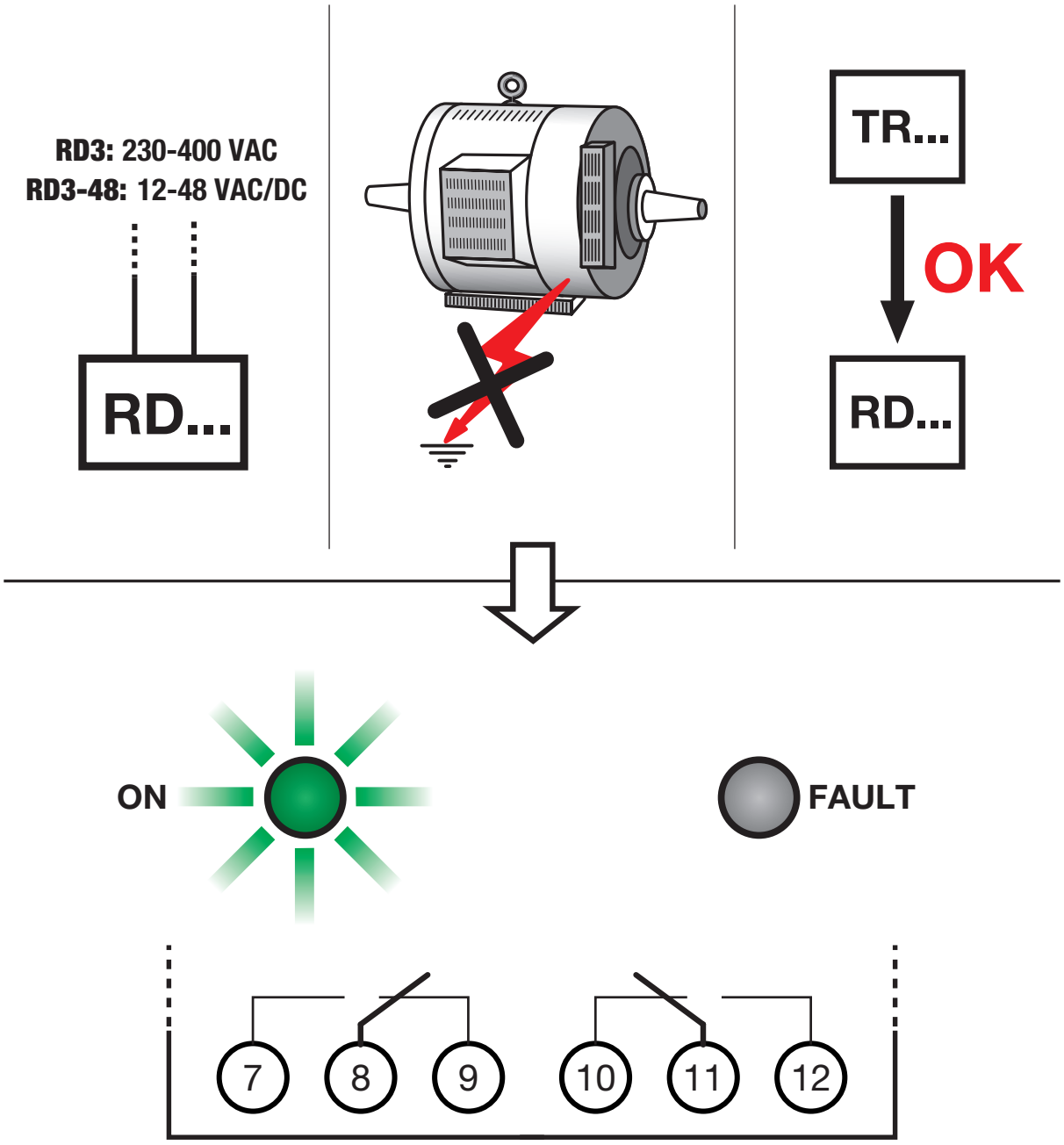
Kontakte im ausgeschalteten Zustand des Geräts:



3B_76x88mm_RD3_rev4.indd 27 19/09/11 11:00

Meldungen Stand-by-Status

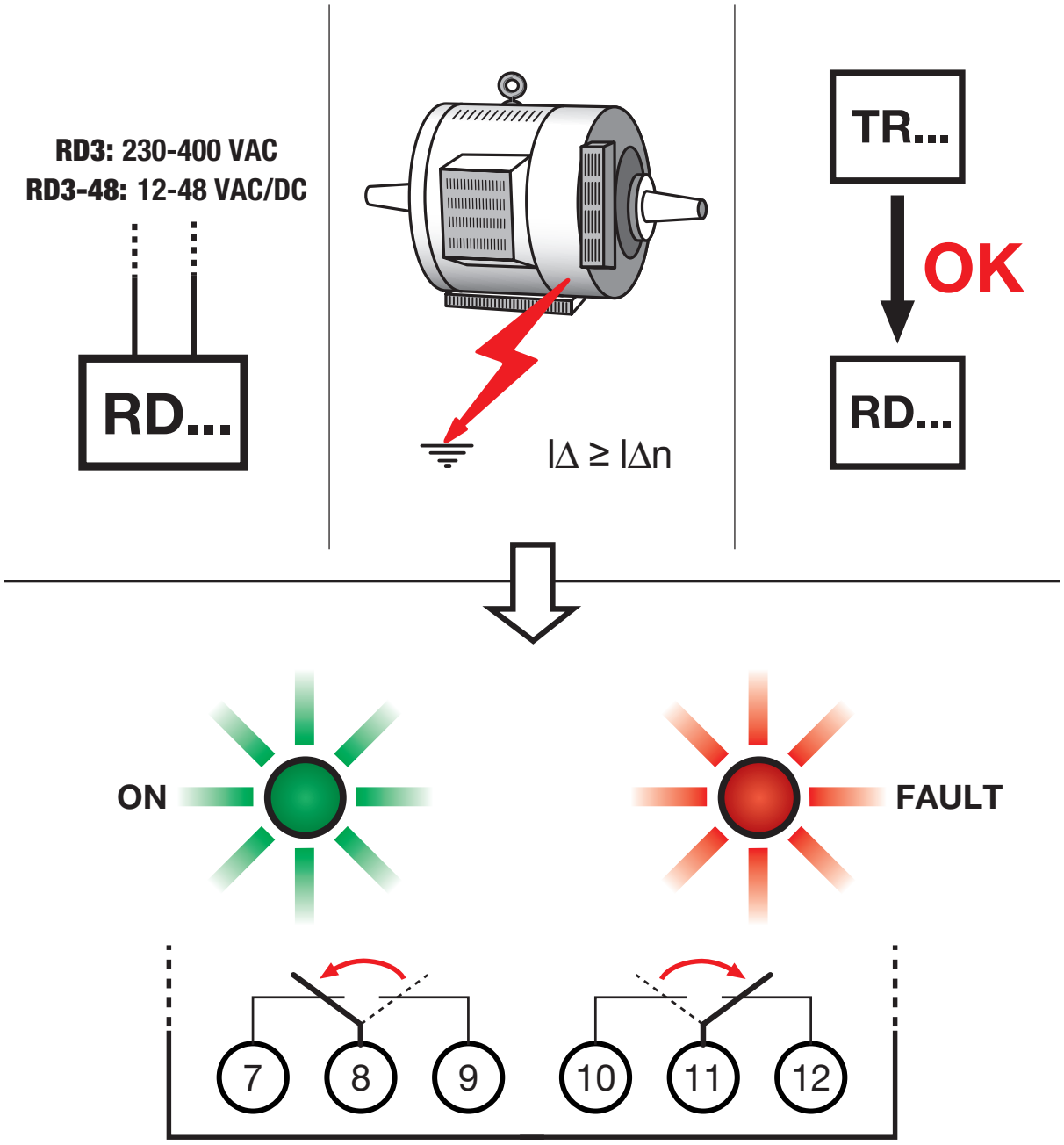
D



3B_76x88mm_RD3_rev4.indd 28 19/09/11 11:00

Fehlermeldungen

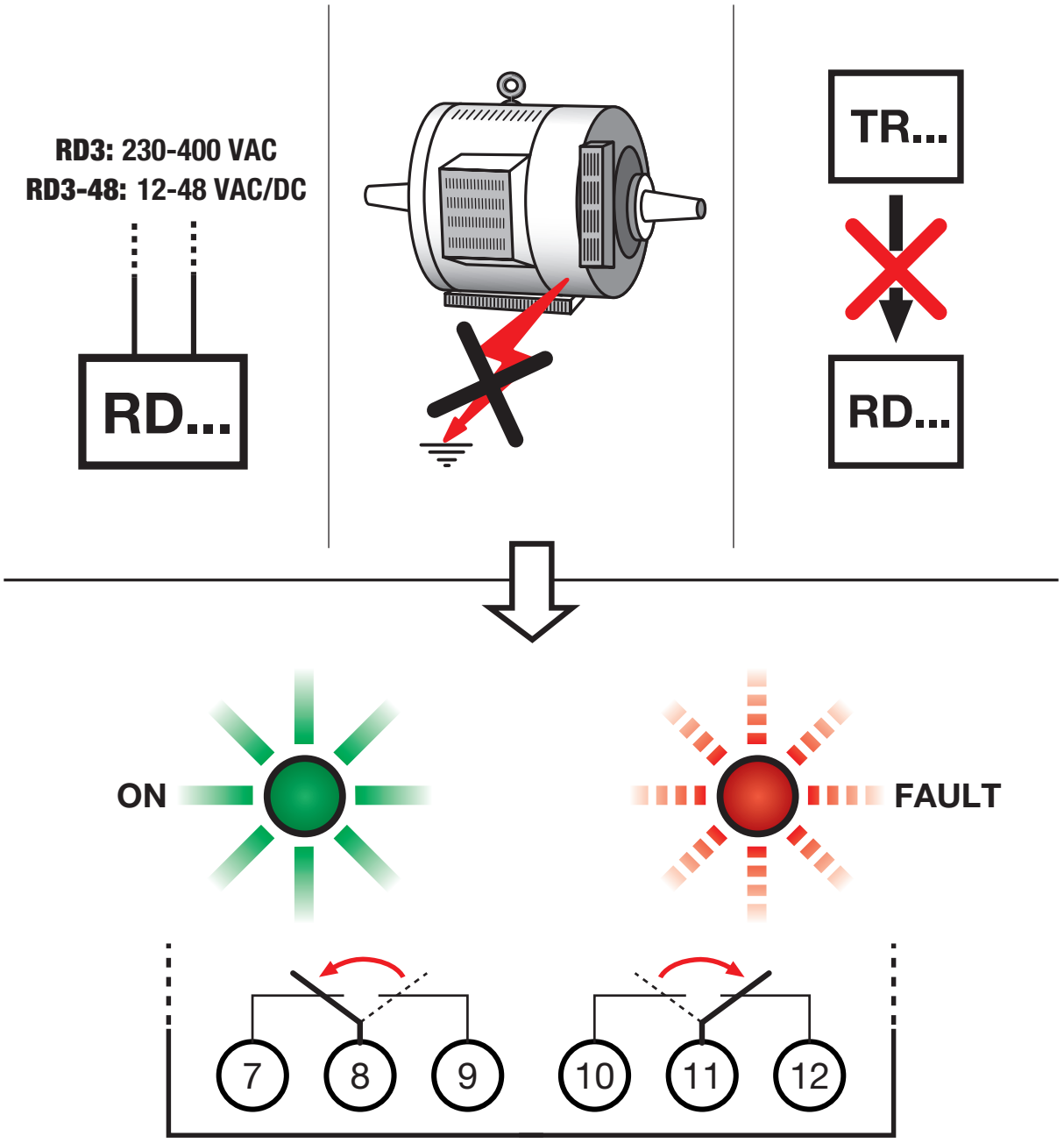
D



3B_76x88mm_RD3_rev4.indd 29 19/09/11 11:00

Meldungen kein TR-Anschluß

D



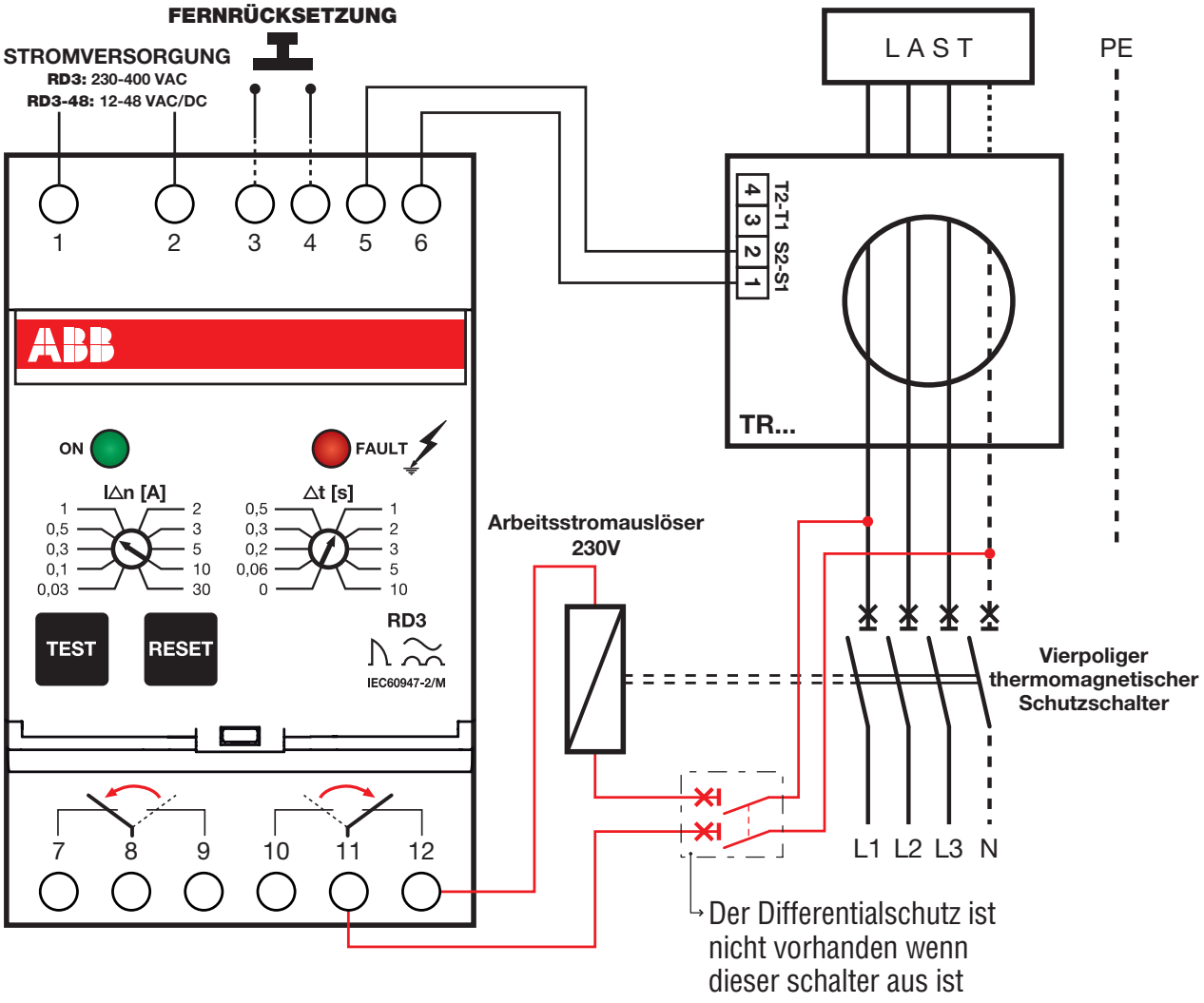
3B_76x88mm_RD3_rev4.indd 30 19/09/11 11:00

Fehlersituation

D

Liegt der vom Wandler ermittelte Fehlerstrom über dem Grenzwert I∆n, so bringt das Relais RD3 den über einen Arbeitsstromauslöser angeschlossenen Leistungsschalter zum Abschalten.

Anschluss an Arbeitsstromauslöser:

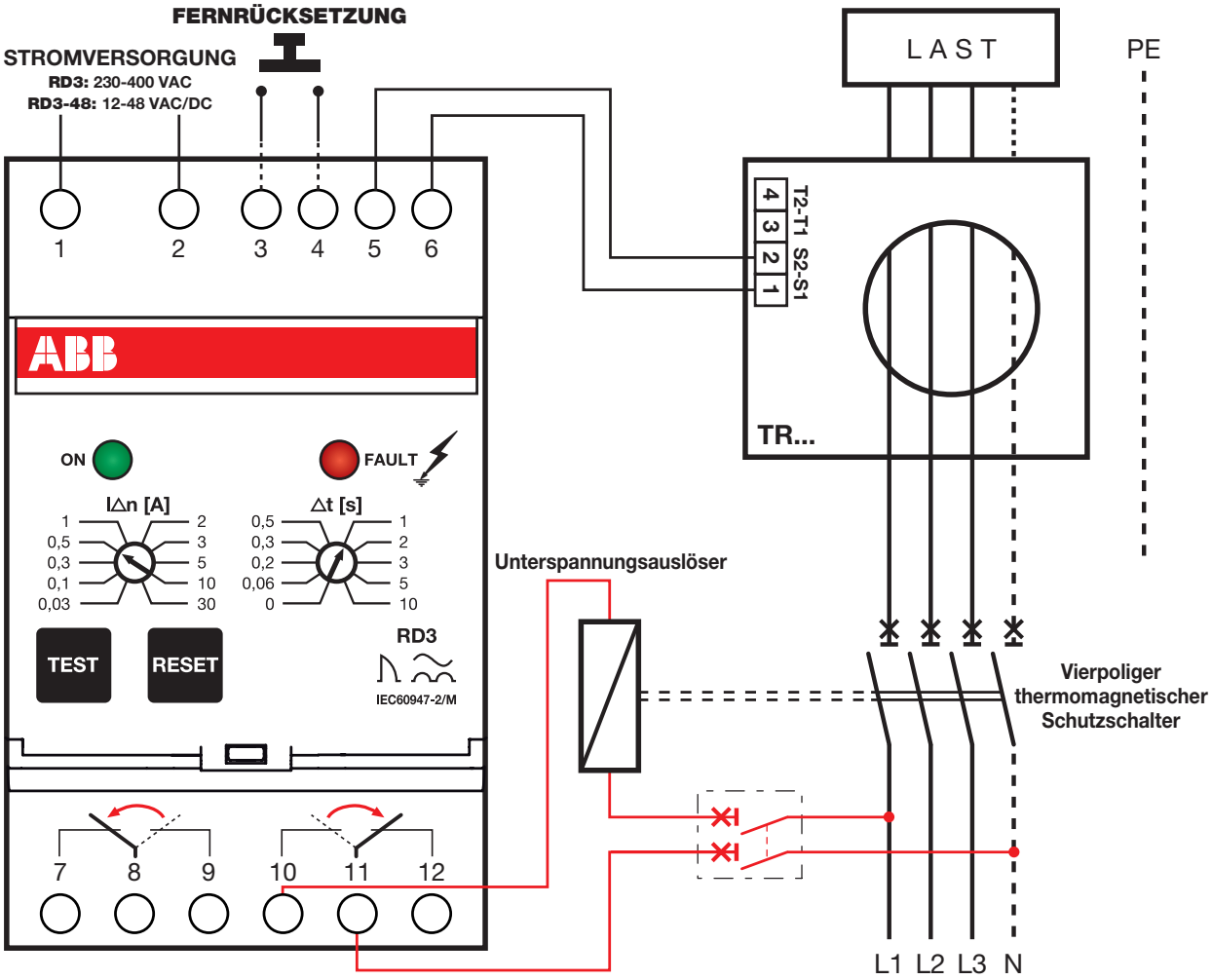


3B_76x88mm_RD3_rev4.indd 31 19/09/11 11:00

Fehlersituation

D

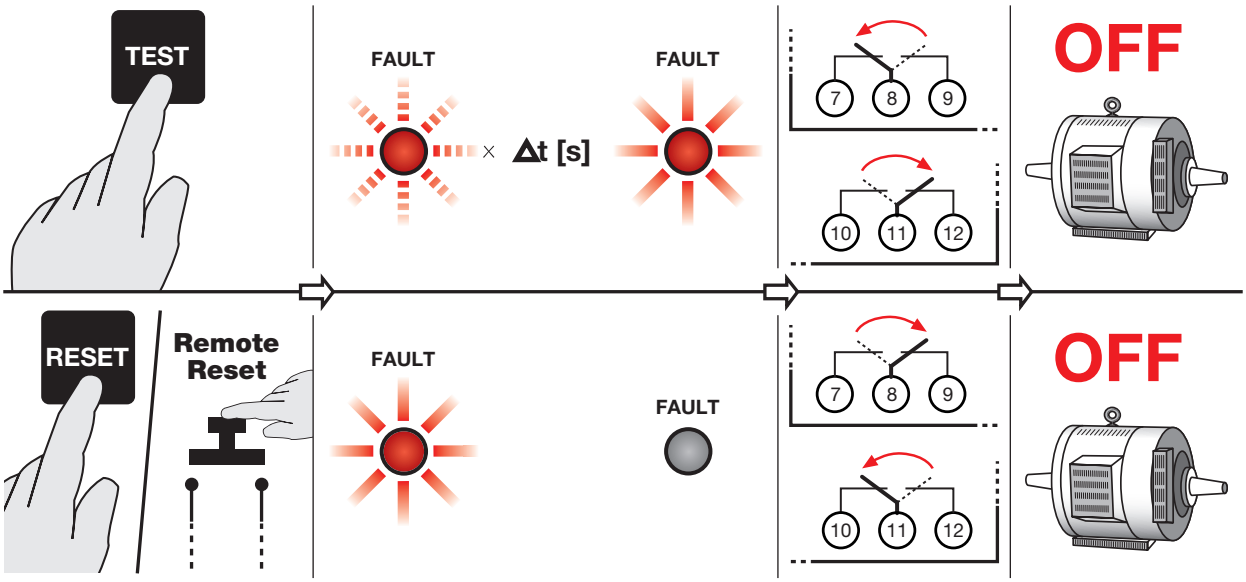
Anschluss an Unterspannungsauslöser:



3B_76x88mm_RD3_rev4.indd 32 19/09/11 11:00

Test

D



3B_76x88mm_RD3_rev4.indd 33 19/09/11 11:00

Technische Daten

D

Versorgungsspannung RD3	230-400 V AC +10% / -15%
Versorgungsspannung RD3-48	12-48 V AC/DC +10% / -15%
Versorgungsfrequenz RD3 / RD3-48	50-60 Hz
Typ	A (bis $I_{\Delta n}$ = 5 A)
Betriebstemperatur	-25 °C ... +70 °C
Max. Leistungsaufnahme RD3	<3,6 W
Max. Leistungsaufnahme RD3-48	<600 mW
Einstellung Grenzwert Empfindlichkeit $I\Delta n$	0,03-0,1-0,3-0,5-1-2-3-5-10-30
Einstellung Grenzwert Auslösezeit Δt	0-0,06-0,2-0,3-0,5-1-2-3-5-10
Max. Widerstand der Verbindungsleitung Wandler– Relais	3 Ω
Max. Länge der Leitung zum Anschluß des Schalters zur Fernrücksetzung	15 m
Belastung Ausgangskontakte	max. 8 A 250 V AC
Max. Anschlussquerschnitt	2,5 mm^2
Module	3
Abmessungen	52,8 × 85 × 64,7 [mm]
Schutzart	IP 20
Bezugsnorm	DIN EN 60947-2, Anhang M

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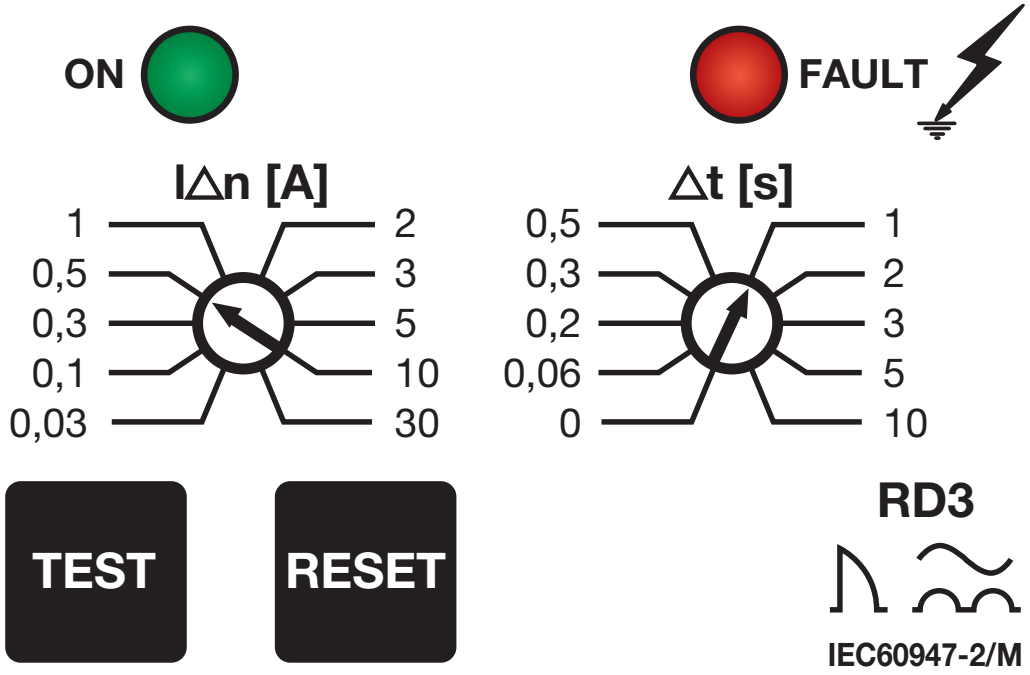
Description

F

Le dispositif RD3 de la famille des disjoncteurs directionnels électroniques RD3 de ABB fonctionne en tant qu'appareil de surveillance et protection différentielle conformément à la directive CEI EN 60947-2 annexe M* et peut être utilisé en association avec tous les dispositifs automatiques S200 et boîtiers de la gamme Tmax jusqu'à T5, pour les installations industrielles.
La gamme des disjoncteurs directionnels RD3 peut fonctionner en tant que signalisation par le des deux contacts de sortie.



*Jusqu'à 630A

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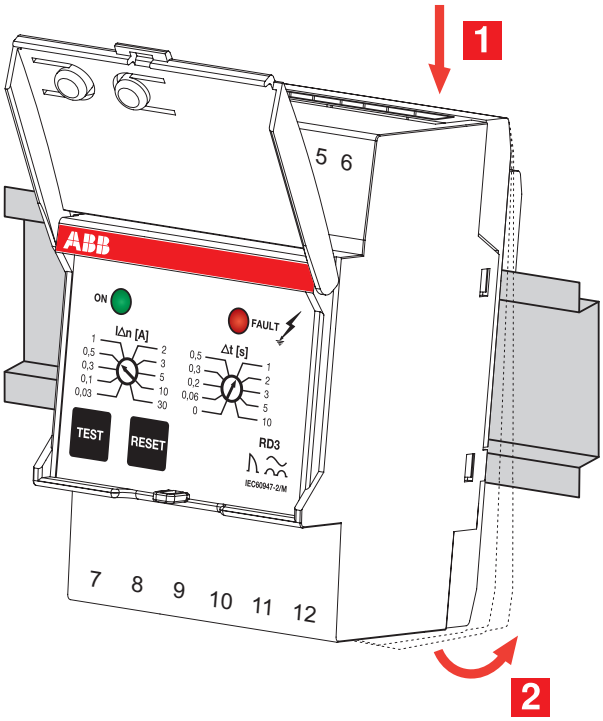
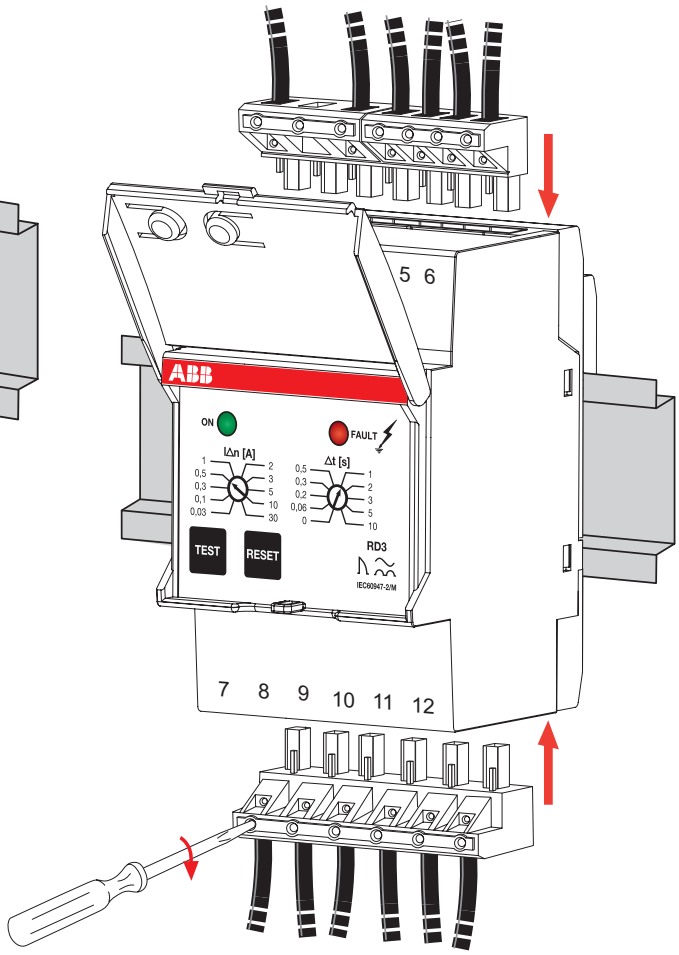
Installation

F





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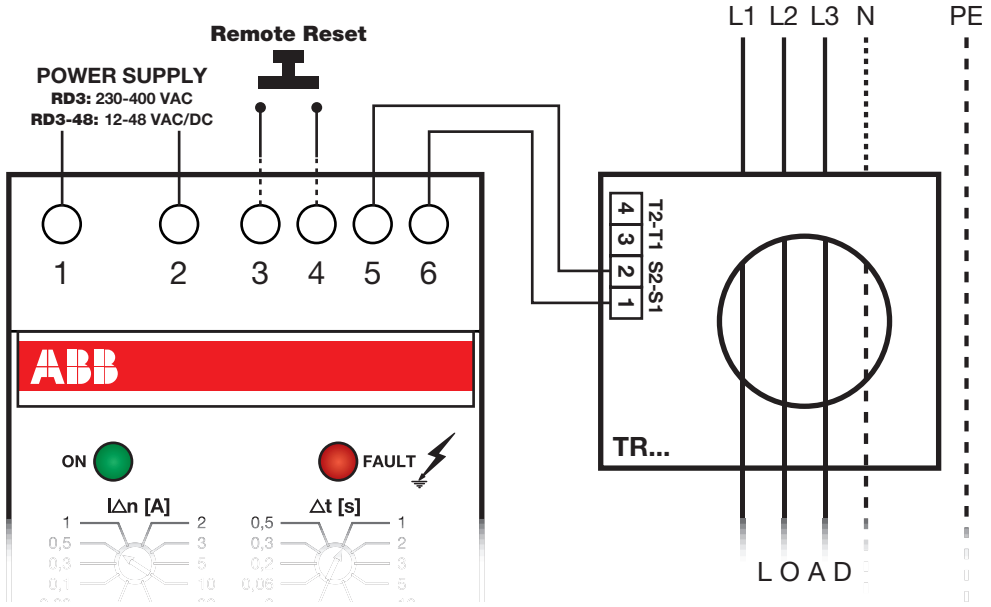
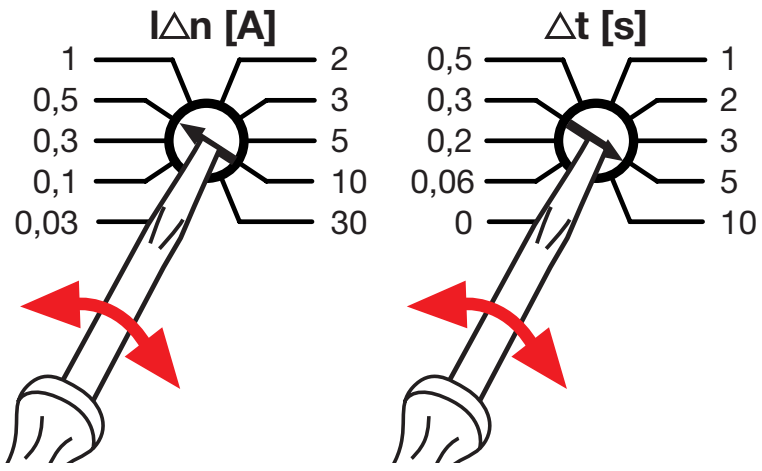
Branchement Toron-Disjoncteur

F



Réglage du courant d'intervention différentielle du disjoncteur (IΔn [A]) et du délai d'intervention (Δt [s]).



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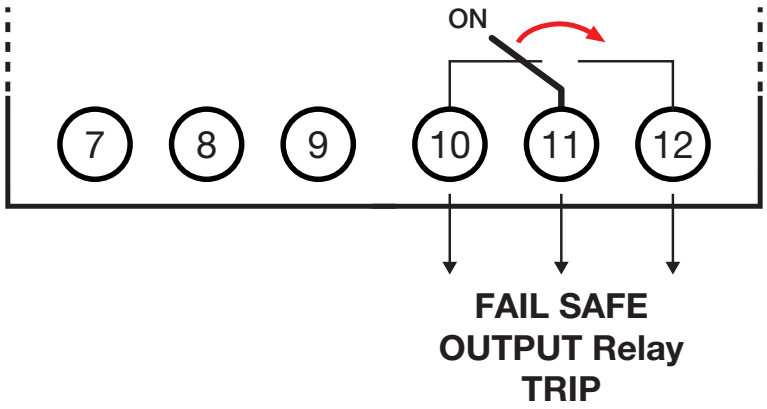
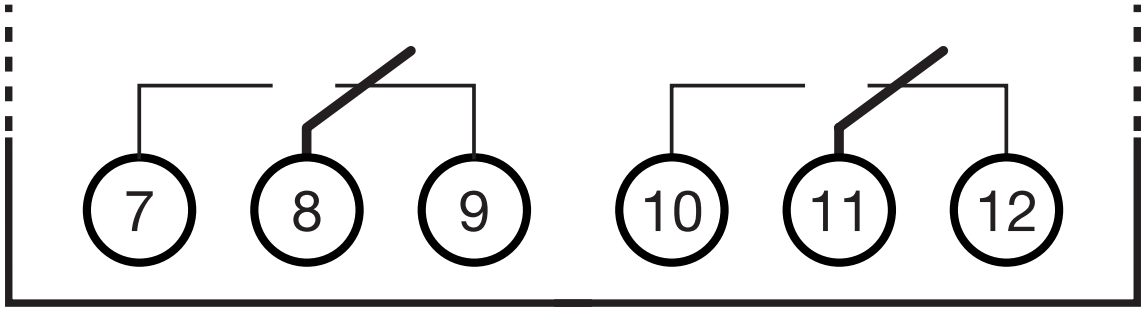
Fonctions

F

Sûreté → intégrée (ou Fail-safe) integrée dans le dispositif (sûreté positive). En cas de manque d'alimentation du dispositif RD3, les contacts de sortie numérotés 10 11 12 commuteront comme dans l'illustration ci-contre.



Contacts en situation de dispositif hors tension:



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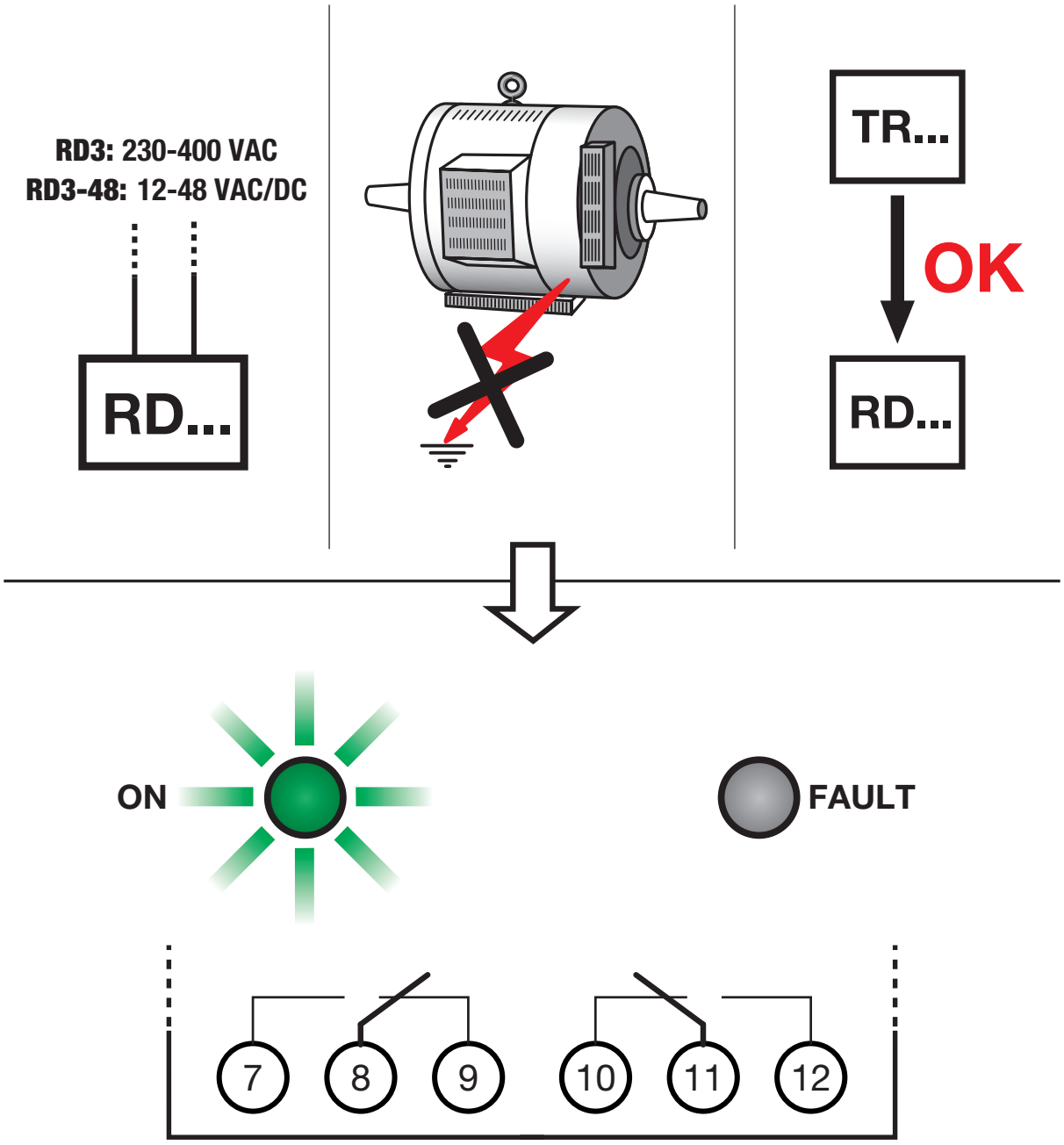
Signalisations stand by

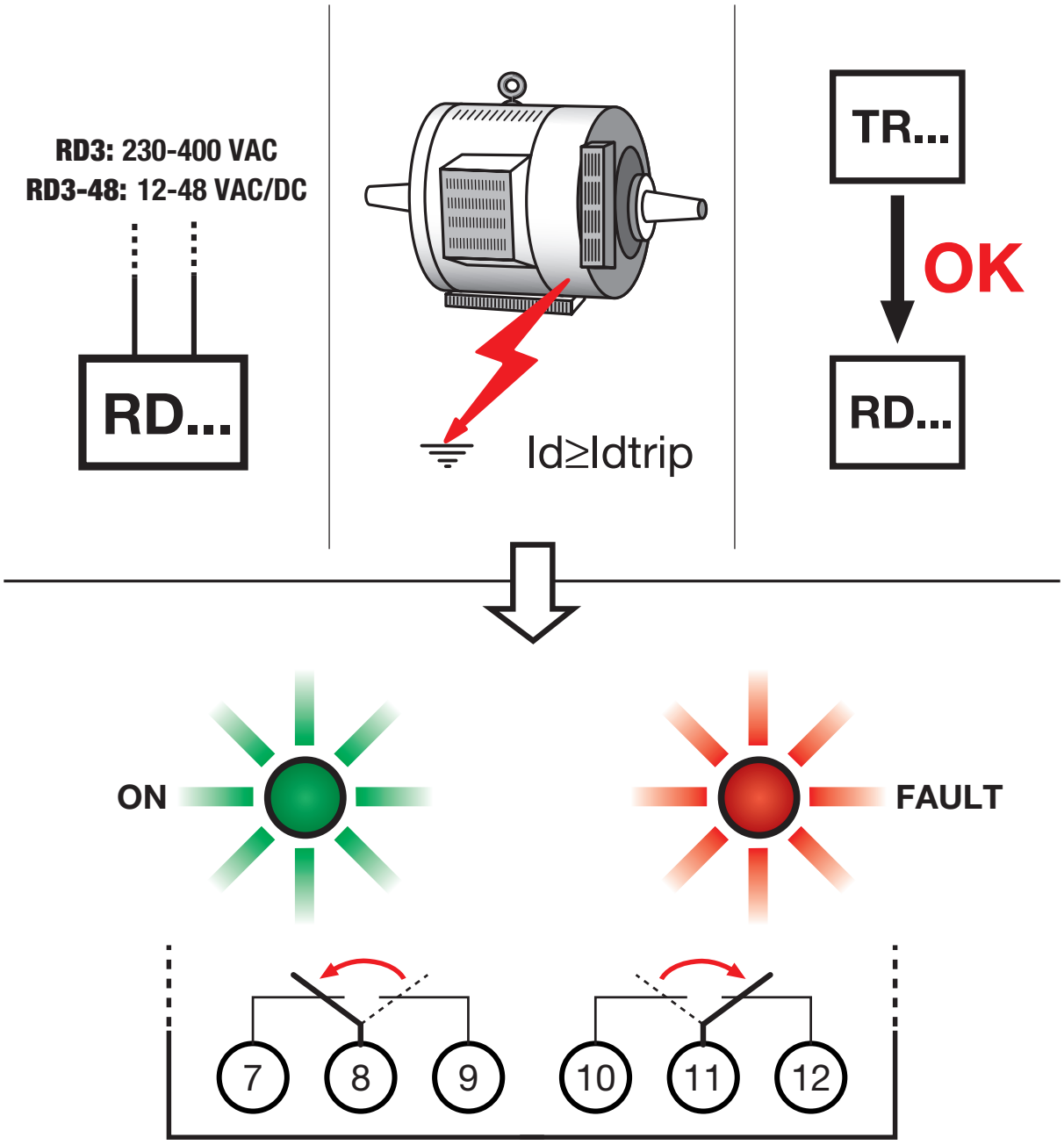
F



3B_76x88mm_RD3_rev4.indd 39 19/09/11 11:00

Signalisations panne

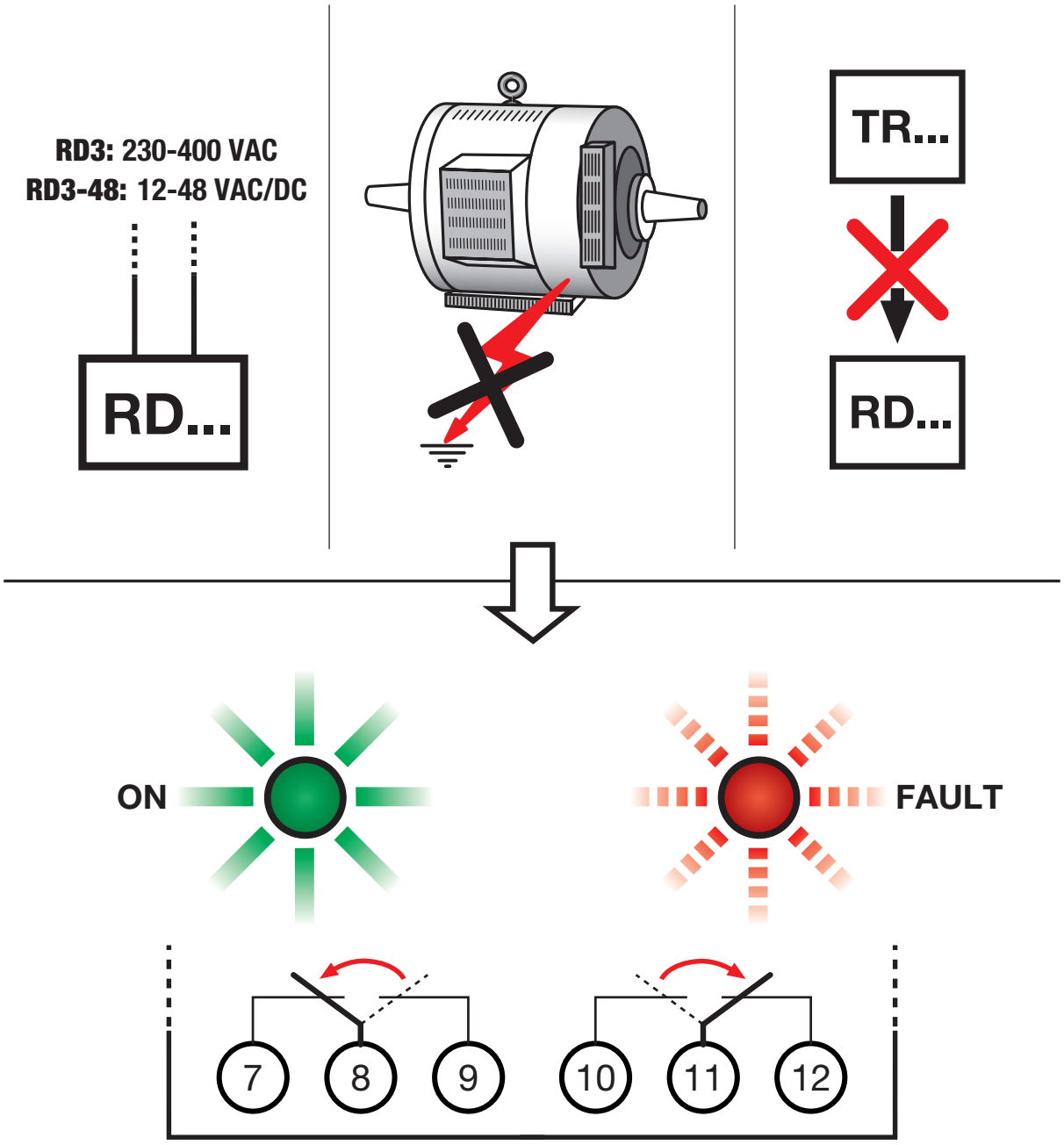
F



3B_76x88mm_RD3_rev4.indd 40 19/09/11 11:00

Signalisations défaut branchement TR

F



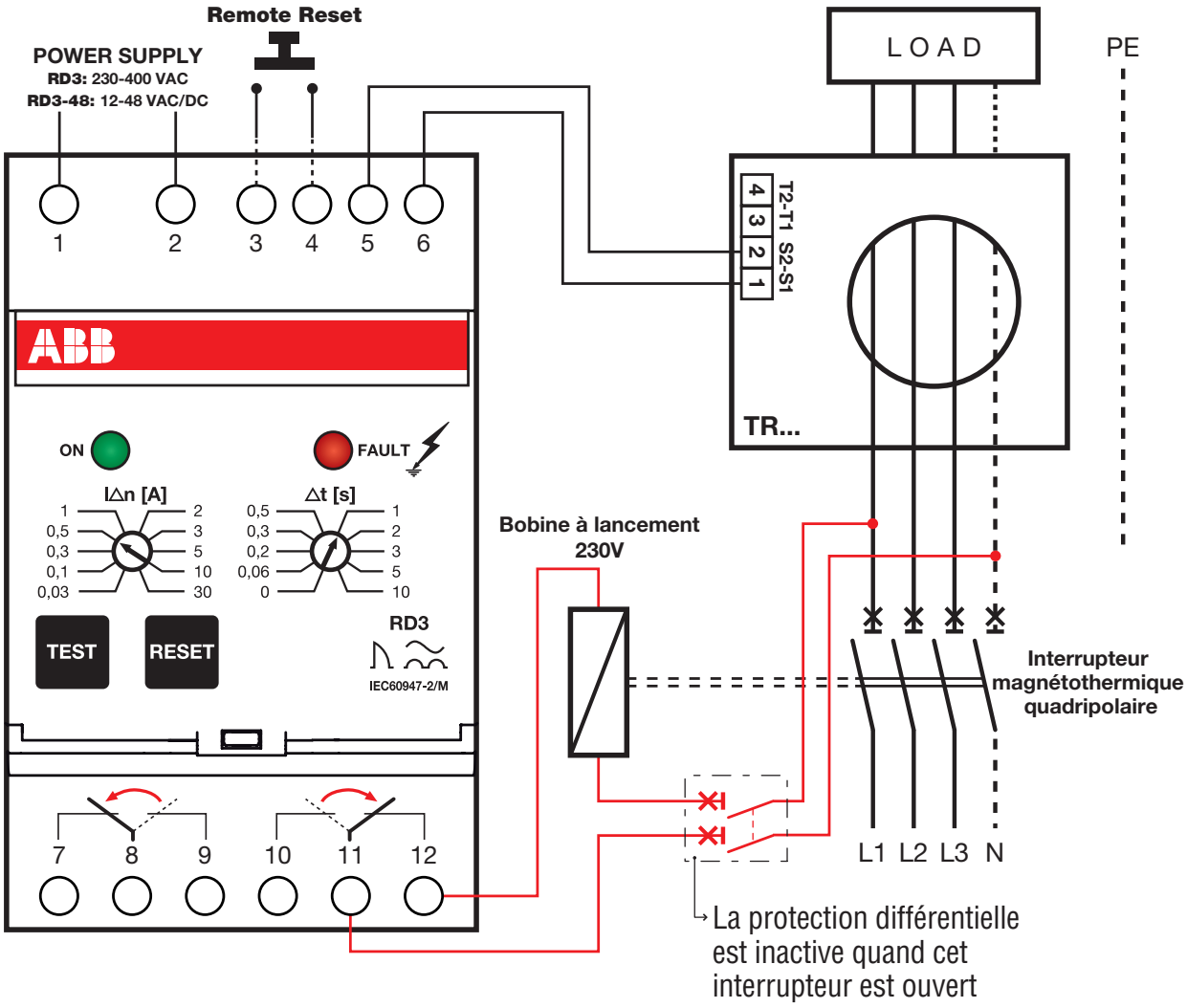
3B_76x88mm_RD3_rev4.indd 41 19/09/11 11:00

Situation de panne

F

Lorsque la valeur du courant différentiel-résiduel, détectée par le réducteur toroïdal, est supérieure au seuil I∆n, le disjoncteur RD3 provoque l'ouverture de l'interrupteur automatique auquel il est branché via une bobine de déclenchement.

Branchement avec bobine à lancement de courant:



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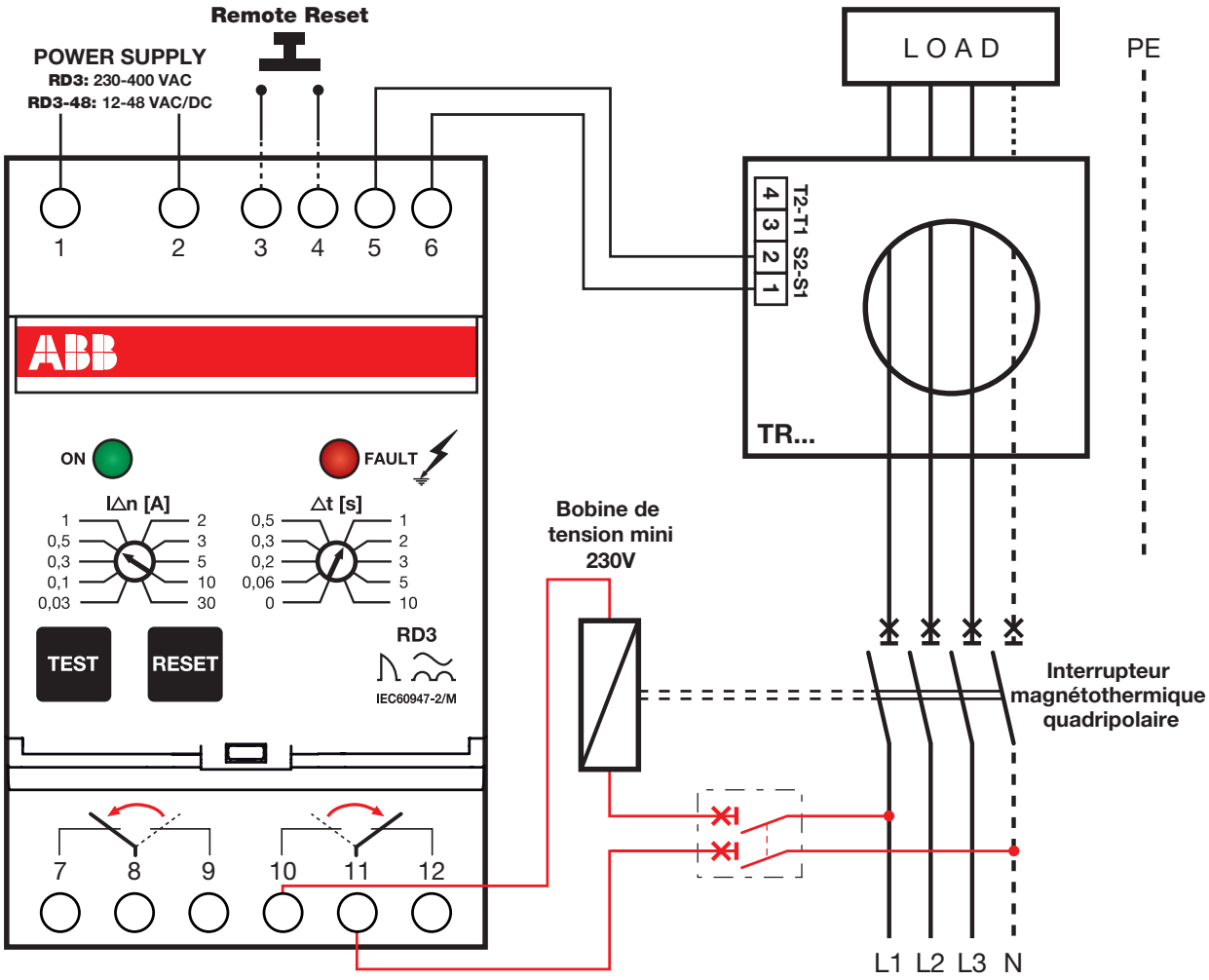
Situation de panne

F

Branchement avec bobine de tension mini:



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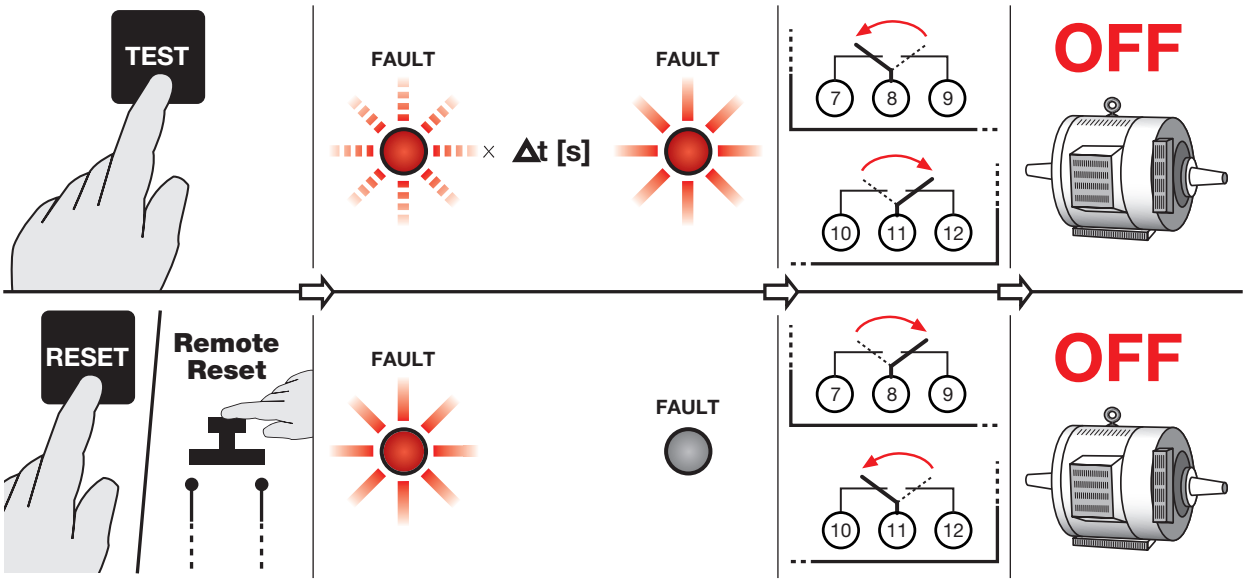
Test

F



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Caractéristiques techniques

F

Tension d'alimentation RD3	230-400 Vac +10% / -15%
Tension d'alimentation RD3-48	12-48 Vac/Vdc +10% / -15%
Fréquence d'alimentation RD3 / RD3-48	50-60 Hz
Type	A (jusqu'à $I_{\Delta n}$ = 5 A)
Température de fonctionnement	-25 °C ... +70 °C
Puissance max. absorbée RD3	<3,6 W
Puissance max. absorbée RD3-48	<600 mW
Réglage du seuil d'intervention IΔn	0,03-0,1-0,3-0,5-1-2-3-5-10-30
Réglage du seuil d'intervention Δt	0-0,06-0,2-0,3-0,5-1-2-3-5-10
Résistance max. branchement toron-disjoncteur	3 Ω
Longueur max. branchement poussoir à distance-remise à zéro	15 m
Portée des contacts en sortie	8 A 250 Vac
Section max. des câbles bornes	2,5 mm^2
Modules	3
Dimensions	52,8 × 85 × 64,7 [mm]
Degré de protection	IP 20
Norme de référence	IEC 60947-2 annexe M

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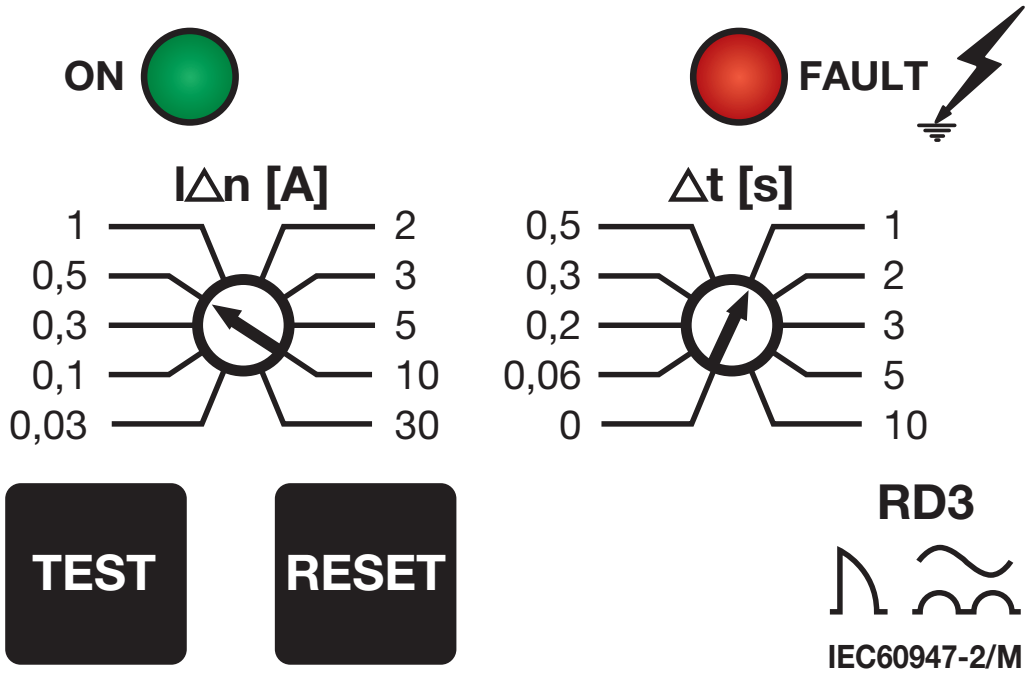
Descripción

E

El dispositivo RD3 de la familia de los relés diferenciales electrónicos RD3 de ABB realiza la función de monitor y protección diferencial según IEC EN 60947-2 anexo M* y puede utilizarse con todos los interruptores automáticos S200 y caja moldeada de la gama Tmax hasta el T5, para instalaciones industriales.
La gama de relés diferenciales RD3 puede realizar la función de señalización a través los dos contactos de salida.



*Hasta 630 A

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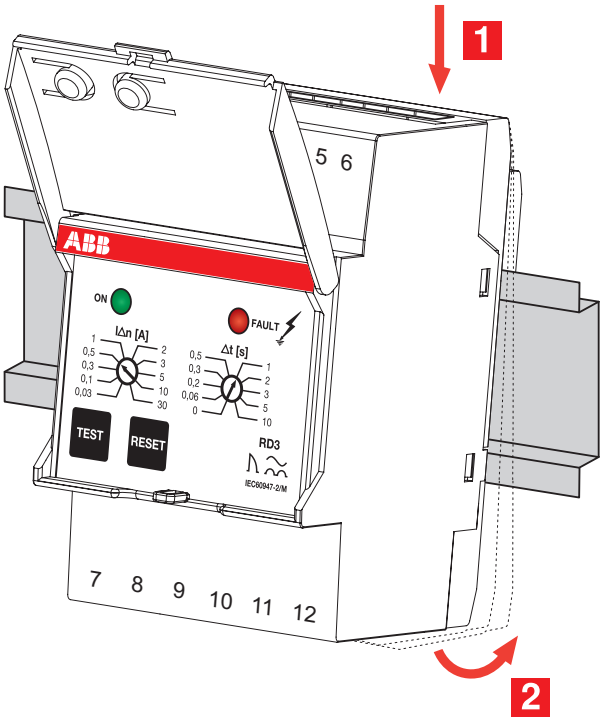
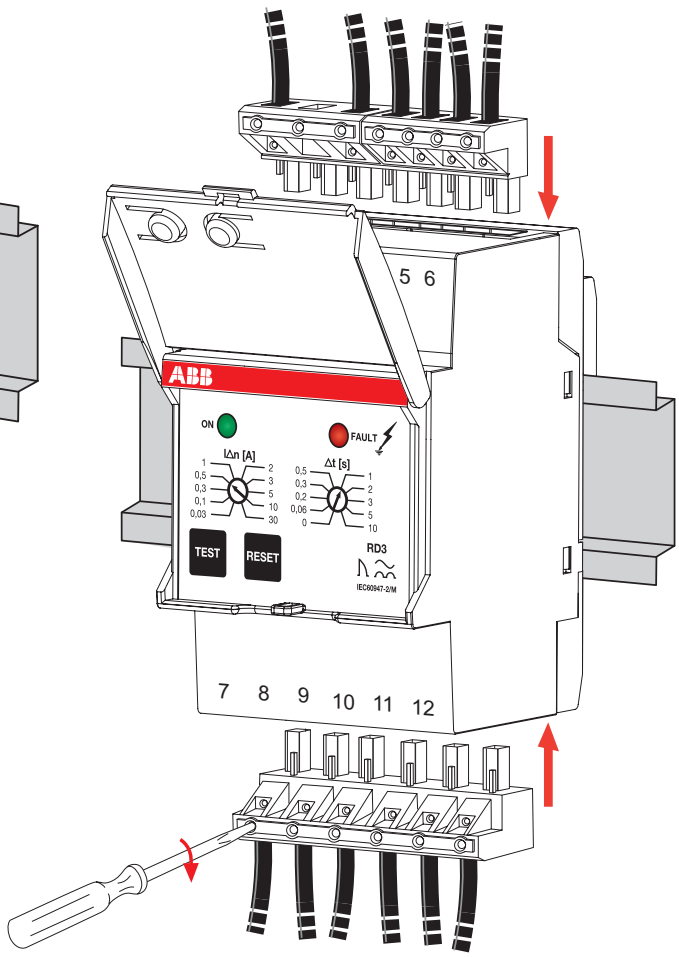
Instalación

E





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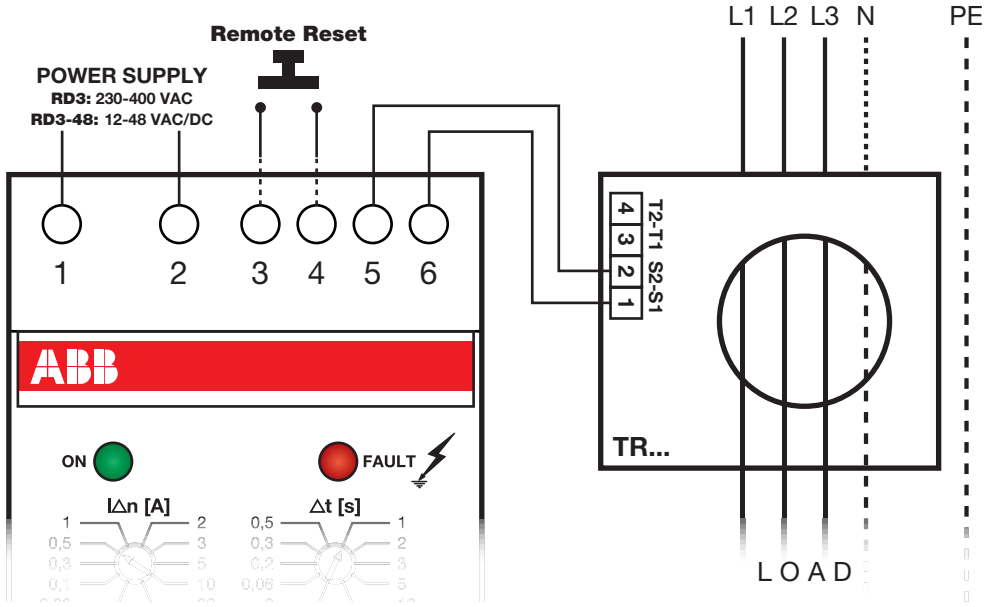
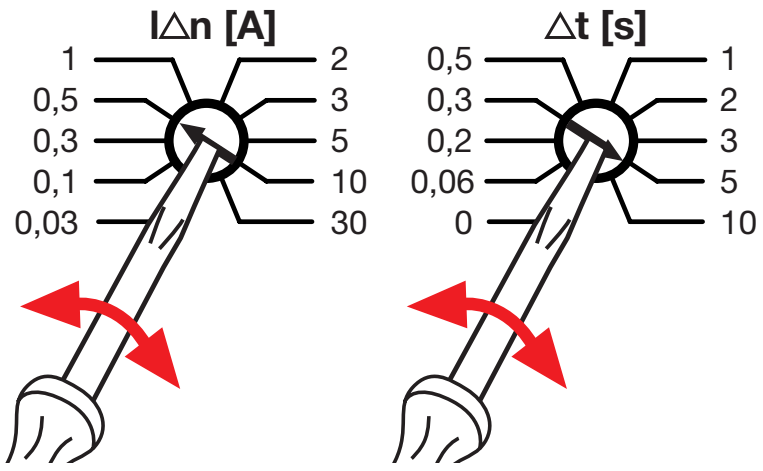
Conexión Toroide-Relé

E



Regulación de la corriente de intervención diferencial (IΔn [A]) y del tiempo de intervención (Δt [s]).



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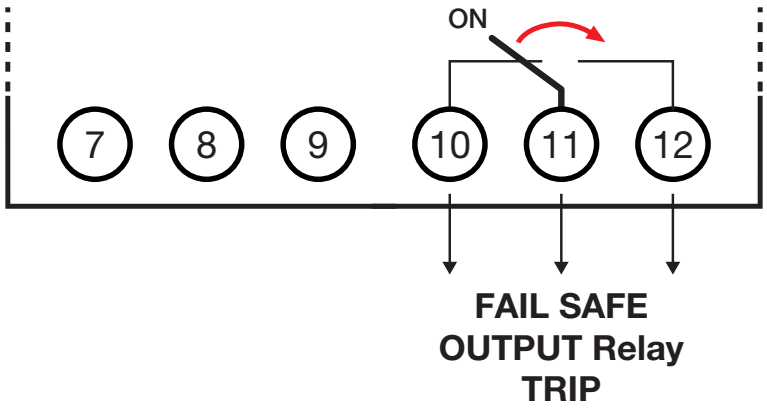
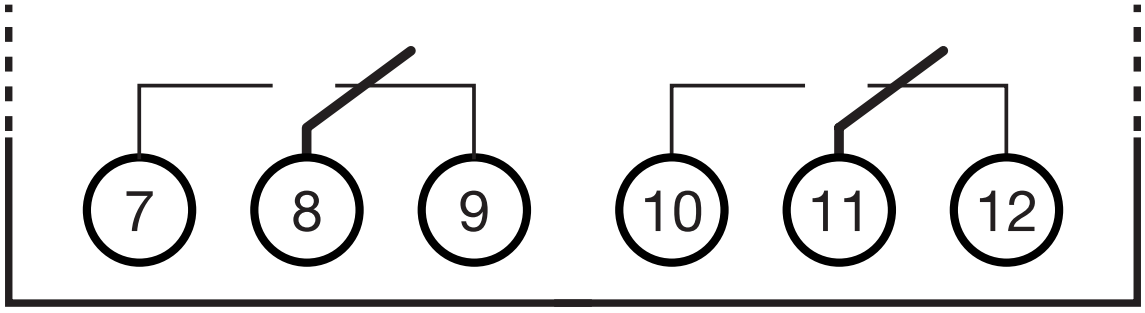
Funciones

E

Fail-safe → integrada en el dispositivo (seguridad positiva). En caso de ausencia de ausencia de alimentación del dispositivo RD3 los contactos de salida 10, 11 y 12 conmutarán como en la imagen anexa.



Contactos con dispositivo apagado:



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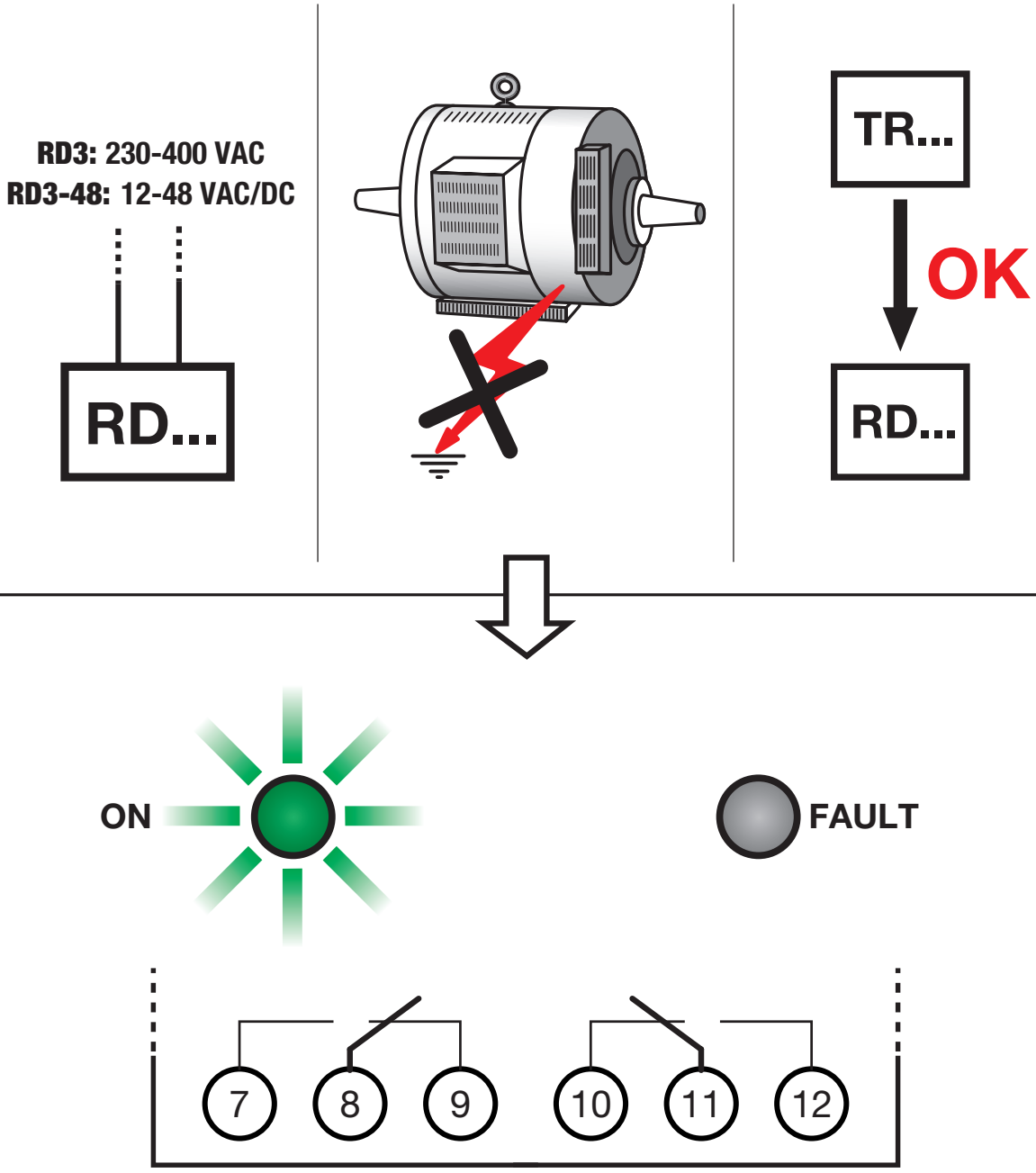
Señalizaciones stand-by

E



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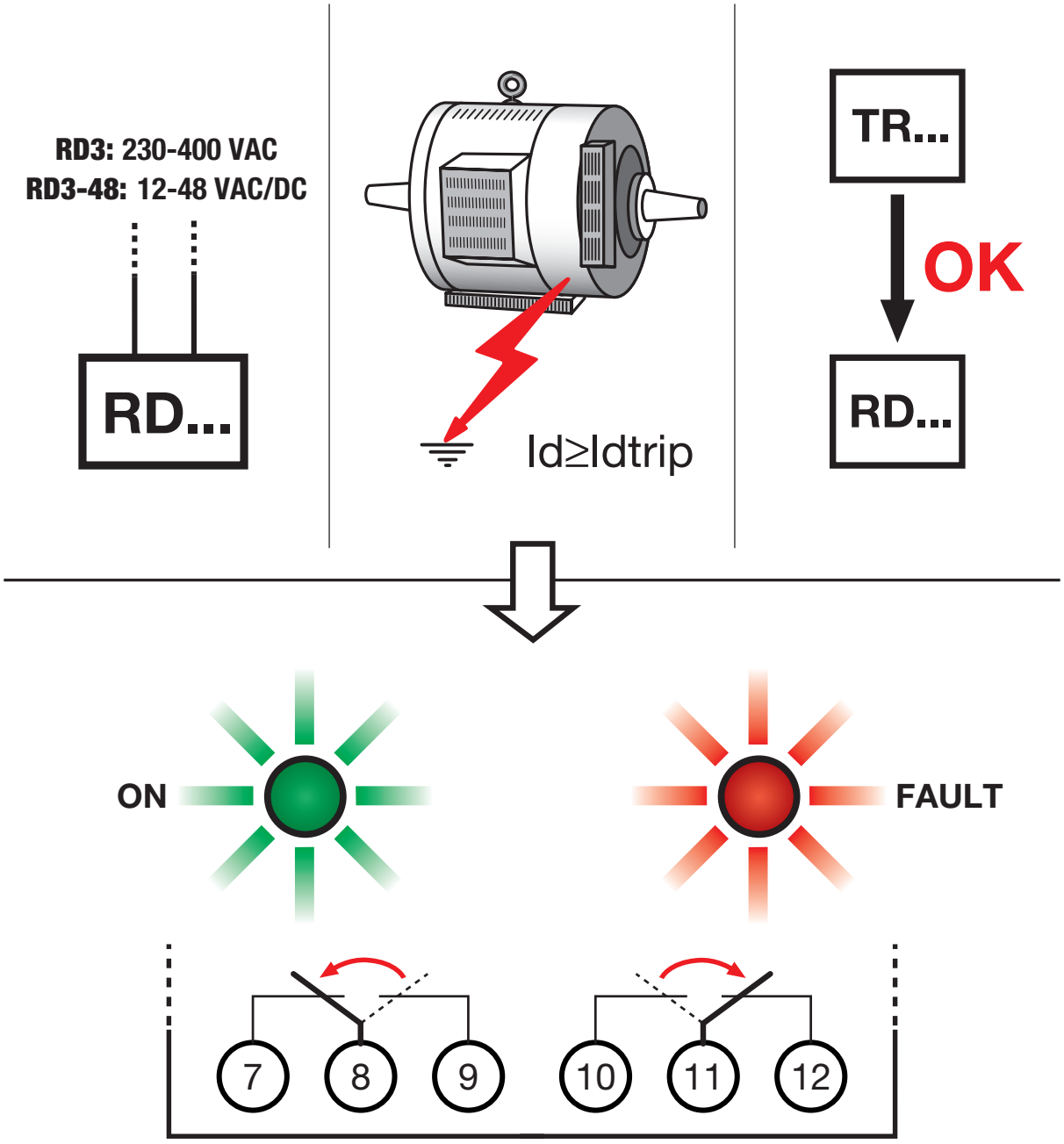
Señalizaciones avería



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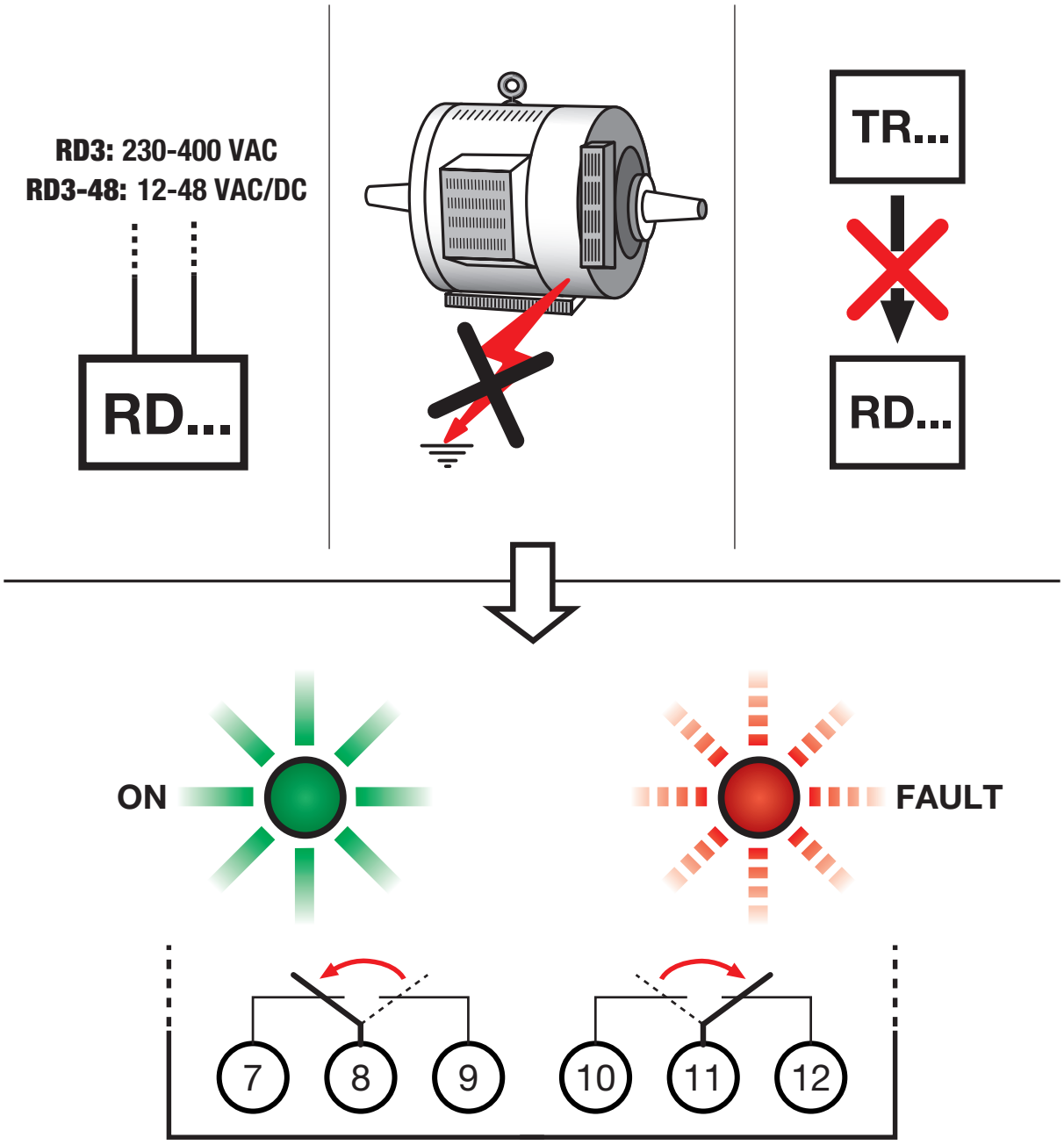
Señalizaciones ausencia conexión TR

E



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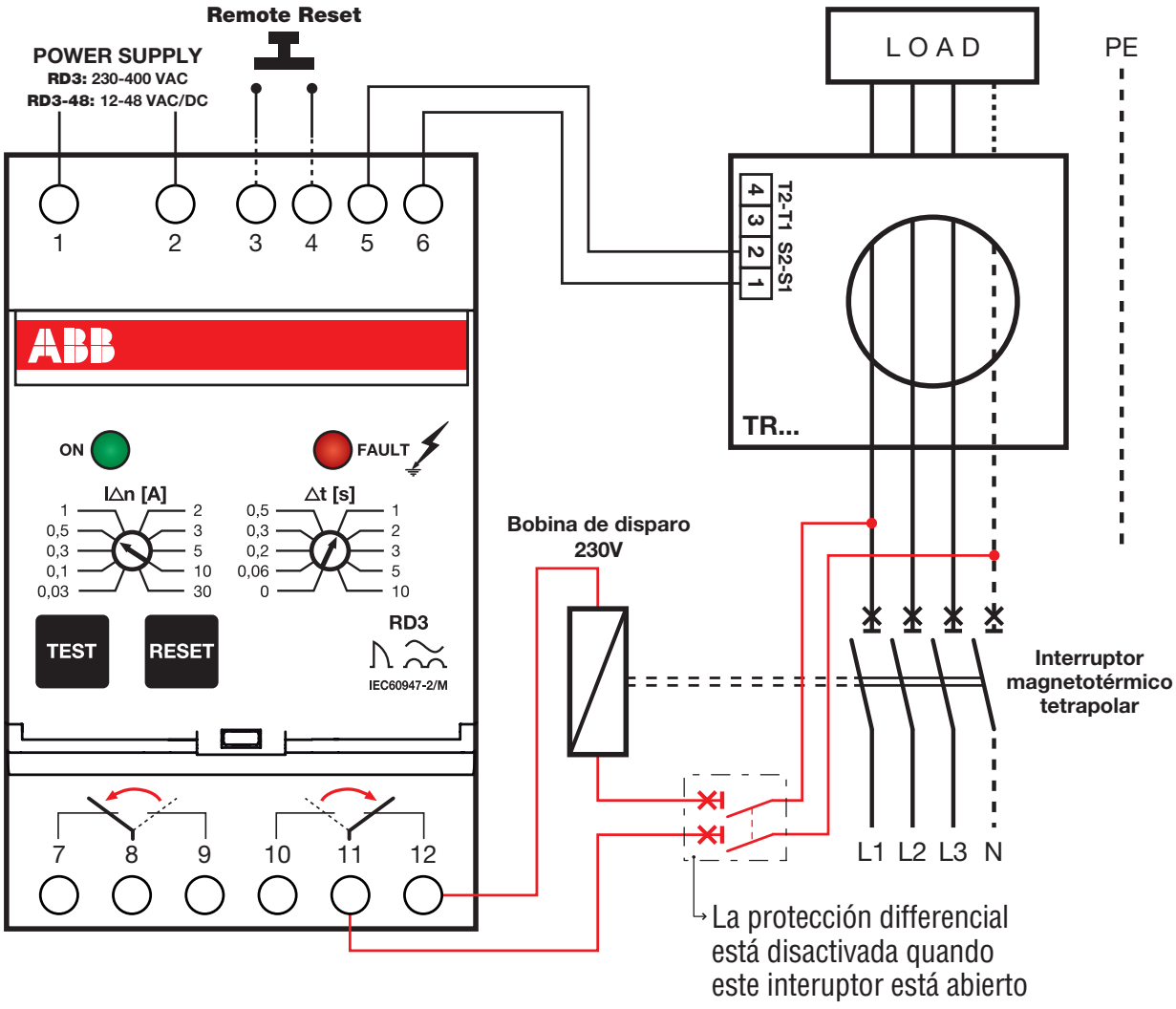
Situación de avería

Cuando el valor de la corriente diferencial detectada por el trasformador toroidal es superior al umbral I∆n, el relé RD3 provoca la apertura del interruptor automático al que está conectado a través de emissión de corriente.

Conexión con bobina de emisión de corriente:



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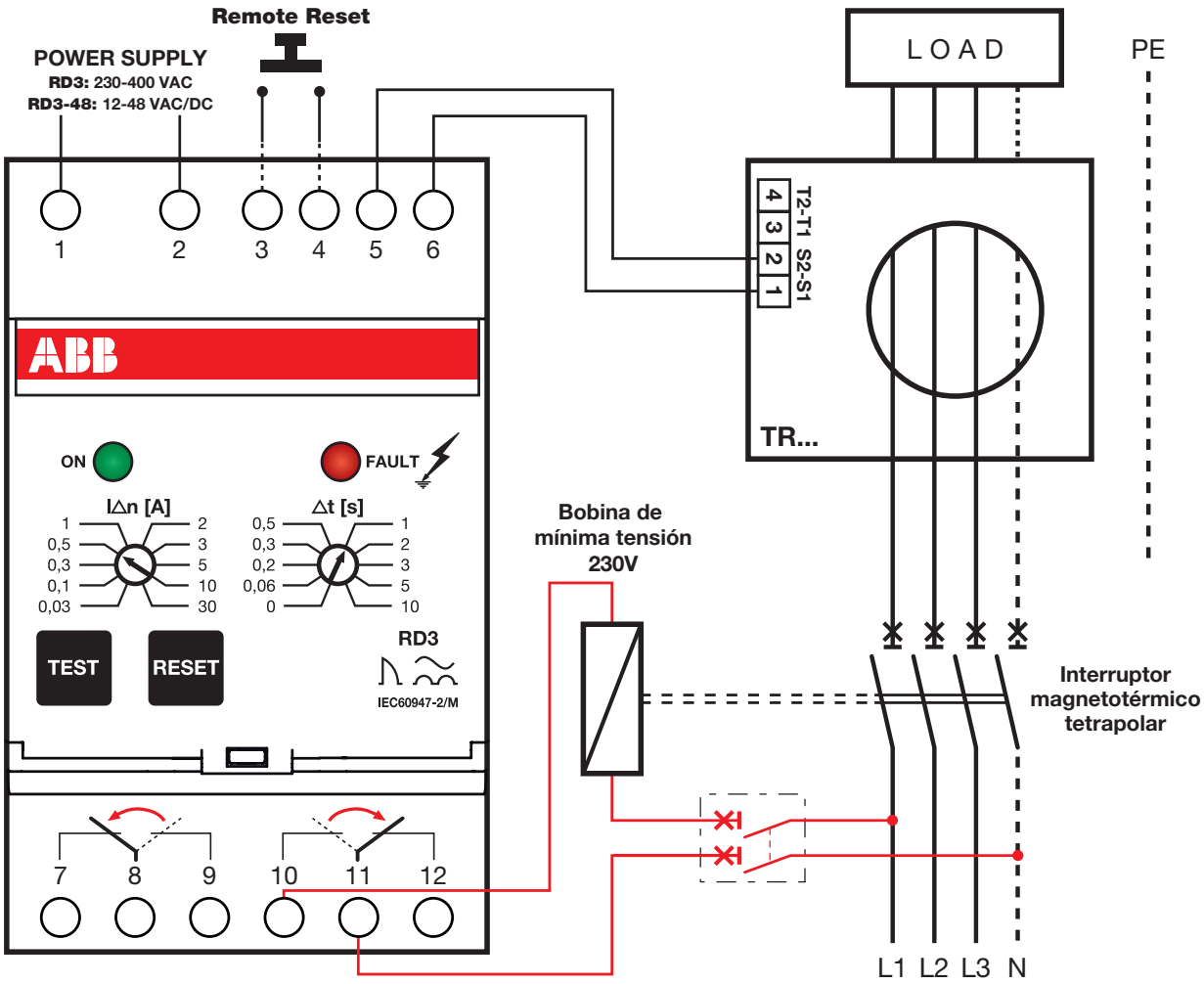
Situación de avería

Conexión con bobina de mínima tensión:



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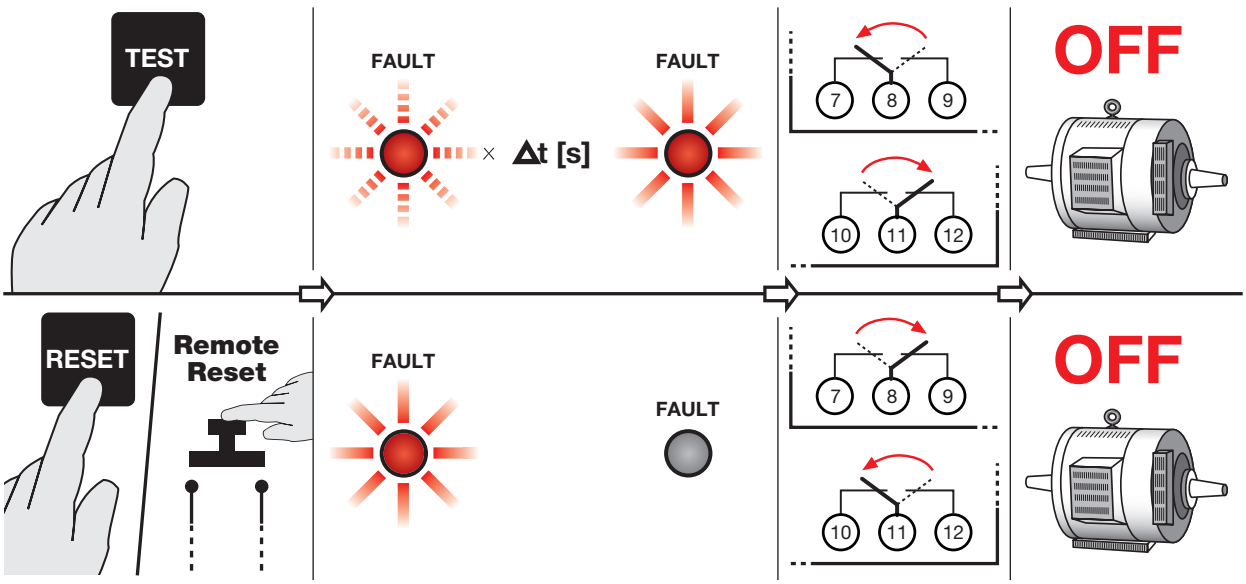
Test



3B_76x88mm_RD3_rev4.indd 55 19/09/11 11:00

Características técnicas

E

Tensión de alimentación RD3	230-400 Vac +10% / -15%
Tensión de alimentación RD3-48	12-48 Vac/Vdc +10% / -15%
Frecuencia de alimentación RD3 / RD3-48	50-60 Hz
Tipo	A (hasta $I_{\Delta n}$ = 5 A)
Temperatura de funcionamiento	-25°C ... +70°C
Potencia máx. absorbida RD3	<3,6 W
Potencia máx. absorbida RD3-48	<600 mW
Regulación umbral de intervención IΔn	0,03-0,1-0,3-0,5-1-2-3-5-10-30
Regulación umbral de intervención Δt	0-0,06-0,2-0,3-0,5-1-2-3-5-10
Resistencia máx. conexión toroide-relé	3 Ω
Longitud máx. conexión botón remoto-reseteo	15 m
Carga de los contactos de salida	8 A 250 Vac
Máx. sección cables bornes	2,5 mm^2
Módulos	3
Dimensiones	52,8 $\times$ 85 $\times$ 64,7 [mm]
Grado de protección	IP 20
Norma de referencia	IEC 60947-2 anexo M

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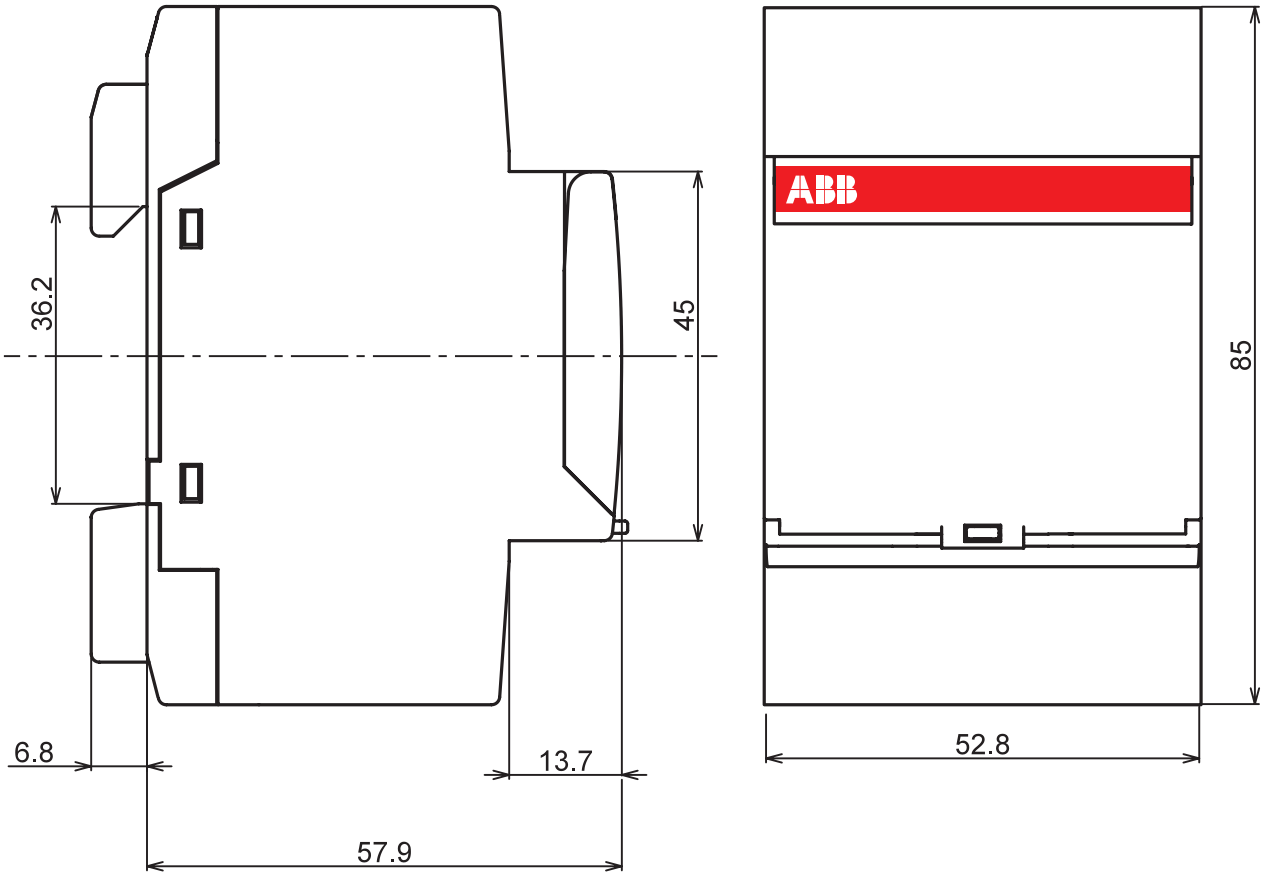
Dimensioni Ingombro - Overall dimensions
Einbauabmessungen - Dimensions d'encombrement
Dimensiones Totales



3B_76x88mm_RD3_rev4.indd 57 19/09/11 11:00

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Fax +39 02 9034 7609

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