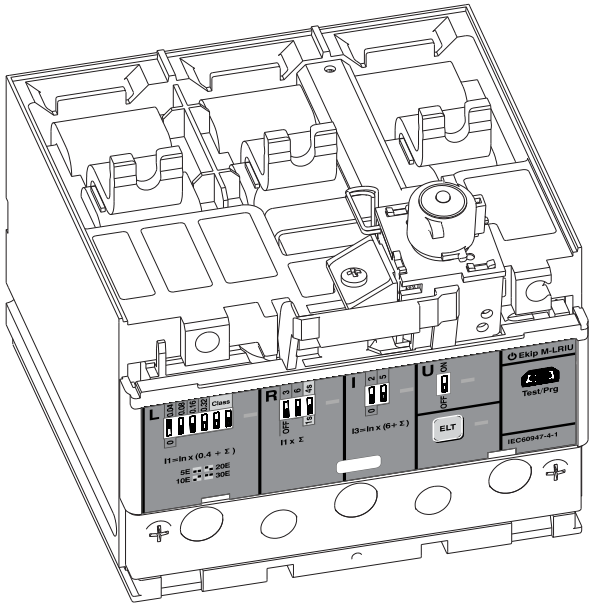
Tmax

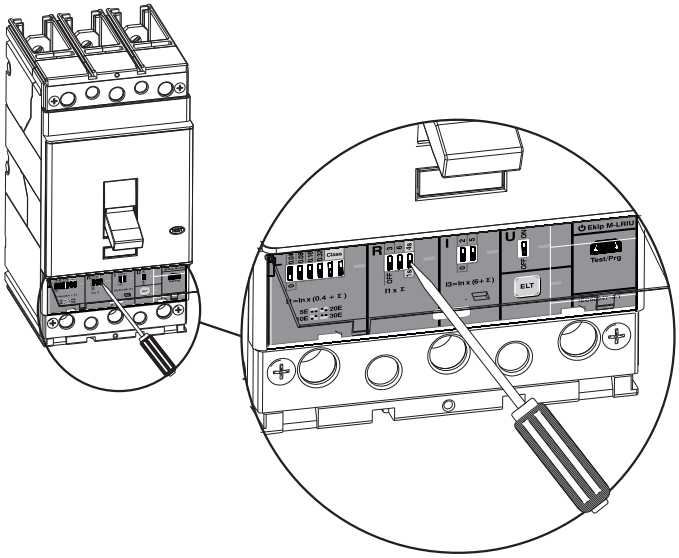
DOC. N.° 1SDH001070R0001 - B2396

Ekip M-LRIU, T4-T5-T6

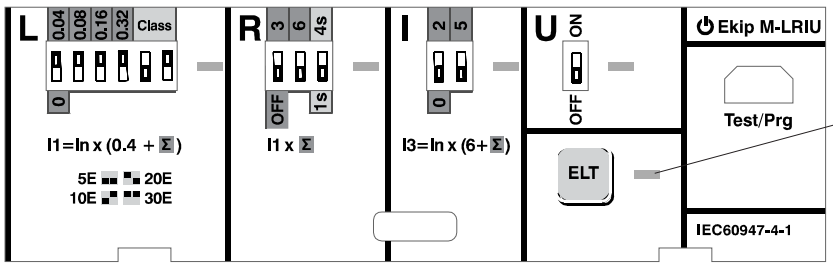
1SDH001070R0001



A



B



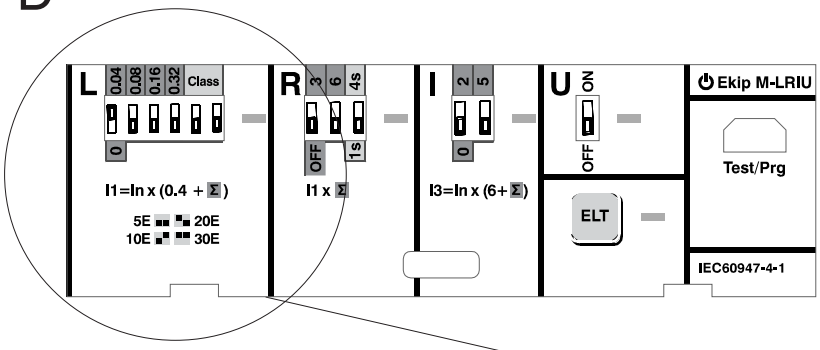
LED OFF = MANUAL

Settaggio di default manuale
Manual default setting
Manuelle Default-Einstellung
Configuration par défaut manuelle
Ajuste de default manual

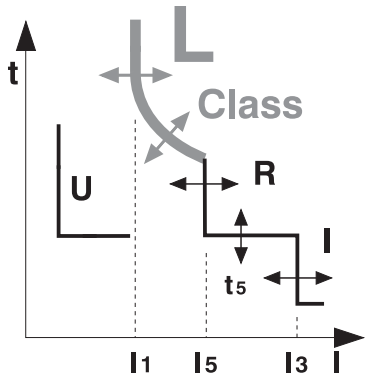
C

LED	Color	CONDITION Run time	
⏻	Green	LED ON = Device active	
L	Red	LED ON = L pre alarm (0,9 x I1 < I < 1,2 x I1)	LED Blinking = L alarm (I > 1,2 x I1)
R	Red	LED Blinking = R alarm (I > I5)	
U	Red	LED Blinking = U alarm	
L | R | I | U	Red	LED Blinking = Parameters inconsistency - R> = I.	
ELT	Green	Led ON = Electronic setting	OFF = Manual setting

D



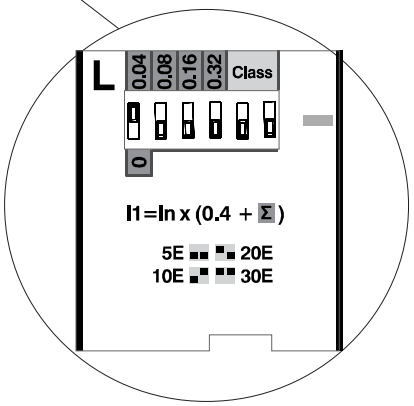
Esempio - Example - Beispiel - Exemple - Ejemplo
In = 100A
I1 = 100x(0,4+0,04)=44A
CLASS = 5E @ (7,2 x I1) = 3s<t_i<5s @ 316,8A (7,2 x 44A)



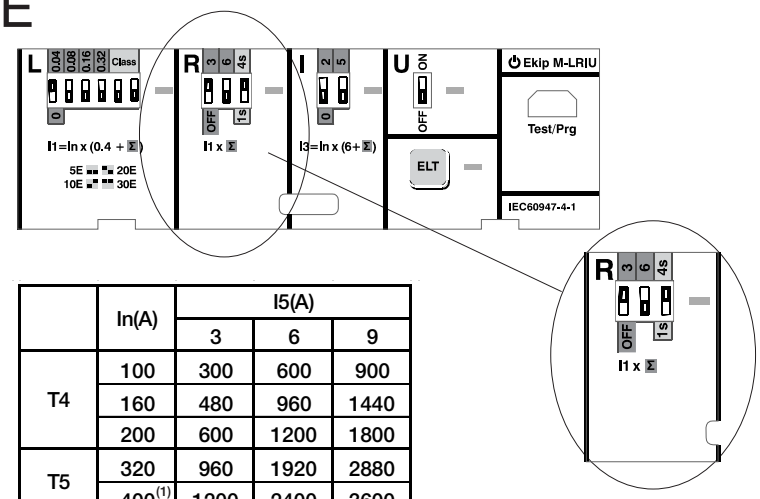
	In(A)	I1(A)						
		0,4	0,44	0,48	...	0,92	0,96	1
T4	100	40	44	48	...	92	96	100
	160	64	70,4	76,8	...	147,2	153,6	160
	200	80	88	96	...	184	192	200
T5	320	128	140,8	153,6	...	294,4	307,2	320
	400(1)	160	176	192	...	368	384	400
T6	630(2)	252	277,2	302,4	...	579,6	604,8	630

5E	3s<t_i≤5s	@ (7,2 x I1)
10E	5s<t_i≤10s	
20E	10s<t_i≤20s	
30E	20s<t_i≤30s	

(1) *ONLY FOR BREAKING PART T5 630*
(2) *ONLY FOR BREAKING PART T6 800*

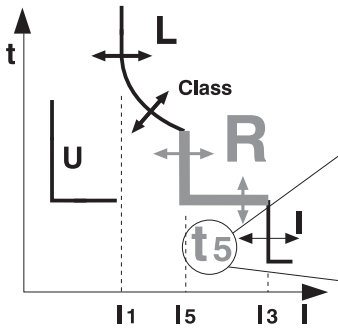


E



	In(A)	I5(A)		
		3	6	9
T4	100	300	600	900
	160	480	960	1440
	200	600	1200	1800
T5	320	960	1920	2880
	400(1)	1200	2400	3600
T6	630(2)	1890	3780	5670

(1) *ONLY FOR BREAKING PART T5 630*
(2) *ONLY FOR BREAKING PART T6 800*



- A regime
- Steady situation
- Eingeschwungener Zustand
- En régime
- En condiciones de régimen

t5 =1s | 4s

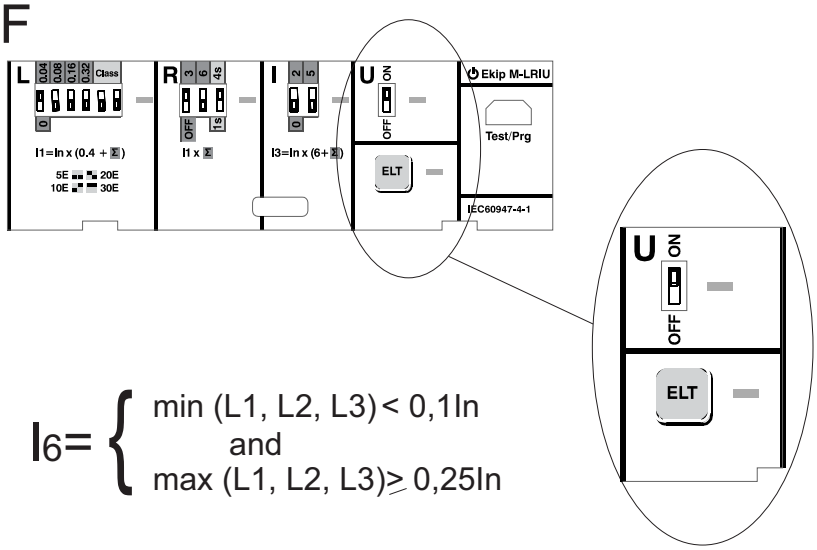
- Start up con rotore bloccato
- Start up with locked rotor
- Anlauf mit blockiertem Läufer
- Start-up avec rotor bloqué
- Arranque con rotor bloqueado

t5 = $CLASS_{min}$ + 1s/4s

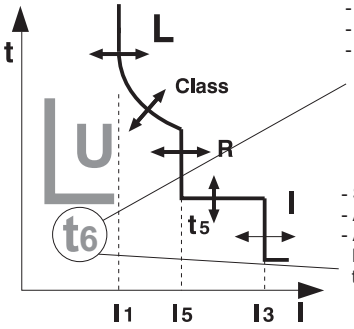
Esempio - Example - Beispiel - Exemple - Ejemplo

In = 100A
I1 = 0,44 x In (see previous example) = 44A
I5 = I1 x 3= 44A x 3 = 132A
CLASS = 5E (see previous example) = 3s < t_t <5s = $CLASS_{min}$ = 3s
t5 Start up = $CLASS_{min}$ + 4s = 3s + 4s= 7s

F



$$I6 = \begin{cases} \min(L1, L2, L3) < 0{,}1In \\ \text{and} \\ \max(L1, L2, L3) \geq 0{,}25In \end{cases}$$



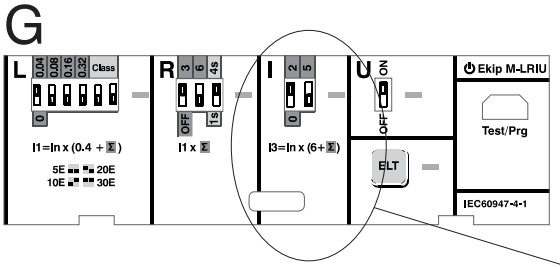
- A regime
- Steady situation
- Eingeschwungener Zustand
- En régime
- En condiciones de régimen

I6 = ON
t6 = 2s

- Start up
- Anlauf
- Arranque

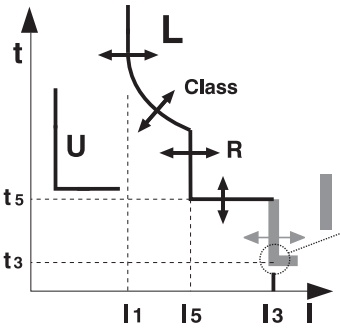
I6 = ON
t6 = min(2s, ($CLASS_{min}$/2))

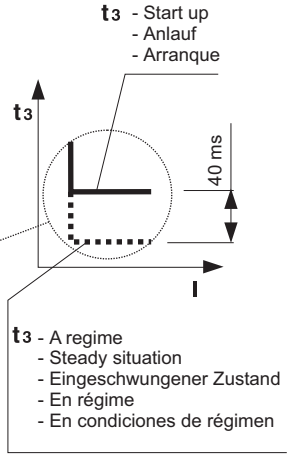
G



	In(A)	I3(A)			
		6	8	11	13
T4	100	600	800	1100	1300
	160	960	1280	1760	2080
	200	1200	1600	2200	2600
T5	320	1920	2560	3520	4160
	400(1)	2400	3200	4400	5200
T6	630(2)	3780	5040	6930	8190

(1) *ONLY FOR BREAKING PART T5 630*
(2) *ONLY FOR BREAKING PART T6 800*





t_3 - Start up
- Anlauf
- Arranque

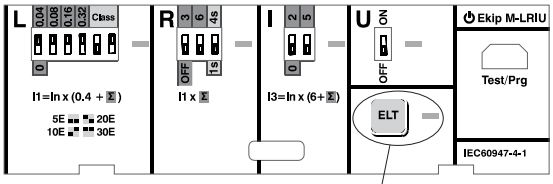
t_3 - A regime
- Steady situation
- Eingeschwungener Zustand
- En régime
- En condiciones de régimen

Esempio - Example - Beispiel - Exemple - Ejemplo

In = 100A
I3 = In x (6+2)= 100 x 8 = 800A

H

ELT by default setting



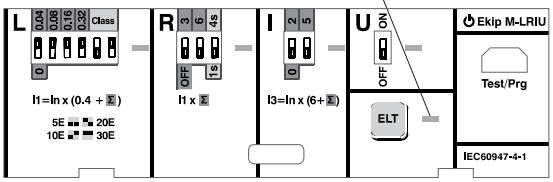
Push button for electronic/manual settings.
Led ON = Electronic
Led OFF = Manual

Ekip M-LRIU		Default
L	I1	1 In
	Class	10E
I	I3	6 In
G	I4	Off
Rj (Jam)	I5	Off
Rs (Stall)	I8	Off
UN (Unbalance)	I7	Off
Upl (Phase loss)	I6	Off
UC (Undercurrent)	I9	Off
PTC	I10	On
	t10	1 s
Normal / Heavy		Normal
Auto Reclosure		Off
Backup Protection		100 ms

Settaggio di default elettronico
Electronic default setting
Elektronische Standardeinstellung
Réglage par défaut électronique
Configuración electrónica predeterminada

I

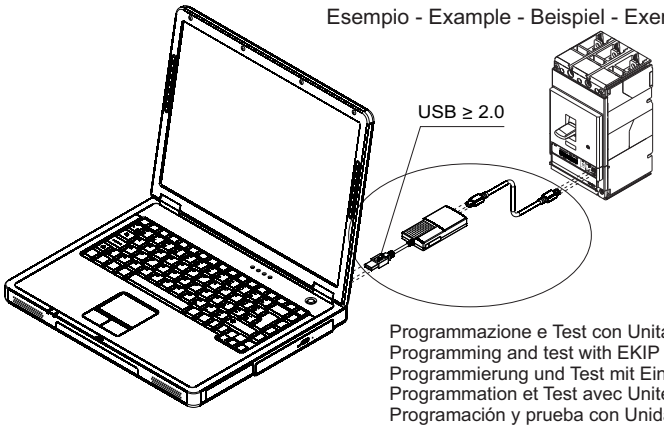
LED ON = ELT



ELT by communication system

Settaggio tramite sist. di comunicazione
Setting by communication system
Einstellung über Kommunikationssystem
Réglage par syst. de communication
Configuración mediante sist. de comunicación

Esempio - Example - Beispiel - Exemple - Ejemplo



Programmazione e Test con Unità EKIP T&P
Programming and test with EKIP T&P
Programmierung und Test mit Einheit EKIP T&P
Programmation et Test avec Unité EKIP T&P
Programación y prueba con Unidad EKIP T&P

Ekip M-LRIU		Range	Default
L	I1	0.4 … 1 In step 0.01 In	1 In
	Class	5E 10E 20E 30E	10E
G	I4	0.2 ... 1 In step 0.1 In	Off - 1 In
	t4	0.1 ... 0.8 s step 0.1 s	0.8 s
I	I3	1 .. 13 In step 0.5 In	6 In
Rj (Jam)	I5	Off – 2 … 10 I1 step 1 I1	Off - 2 I1
	t5	1 ... 10 s step 0.5 s	1 s
Rs (Stall)	I8	Off – 1 … 10 I1 step 1 I1	Off - 1 I1
	t8	2 ... 10 s step 0.5 s	2 s
Upl (Phase loss)	I6	Off – On	Off
	t6	1 ... 10 s step 0.5 s	1 s
UN (Unbalance)	I7	Off – 20 ... 50% step 10%	Off - 20%
	t7	1 ... 10 s step 0.5 s	1 s
UC (Undercurrent)	I9	Off – 50 ... 90% I1 step 10%	Off - 50% I1
	t9	1 ... 20 s step 0.5 s	1 s
PTC	I10	Off – On	On
	t10	1 s	1 s
Normal / Heavy		Normal / Heavy	Normal
Auto Reclosure		Off-15 … 1000s	Off - 60s
Backup Protection		100ms…1s	100ms

J

Trip Test with Ekip TT

1

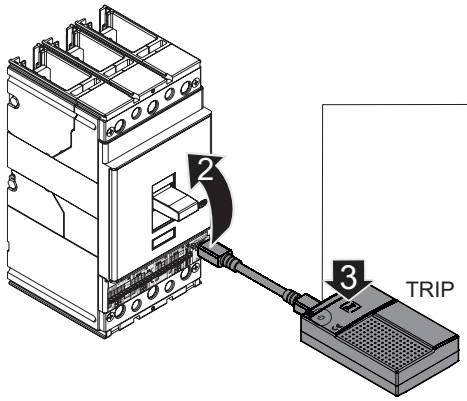
PROCEDURA DI CONTROLLO
- Collegare Ekip TT
- CONTROLLO LED: tutti i led del relè si devono accendere
- ULTIMA INDICAZIONE DI TRIP: se presente nella memoria del relè
- LED: resta acceso finchè l'unità TT e' connessa al relè
- PRONTO PER TRIP

DIAGNOSTIC PROCEED
- Connect Ekip TT
- UNIT CHECK LED: all the leds in the relay must come on
- LAST TRIP INDICATION: if present in the relay's data store
- LED: remains on for as long as the TT is connected to the relay
- READY TO TRIP

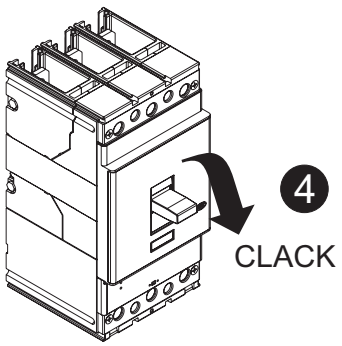
DIAGISTIKABLAUF
- Verbinden Ekip TT
- EINEITHSPRUF-LED: Alle LEDs des Relais müssen aufleuchten
- ANGABE DER LETZTEN AUSLOSUNG: Wenn im Speicher des Relais vorhanden.
- LED: Bleibt angeschaltet, bis die Einheit TT an die Relais angeschlossen ist.
- AUSLOSEBEREIT

PROCÉDURE DE DIAGNOSTIC
- Brancher Ekip TT
- UNIT CHECK LED : toutes les diodes du relais doivent s'allumer
- LAST TRIP INDICATION : si présente dans la mémoire du relais
- LED: la DIODE reste allumée tant que l'unité TT est connectée au relais
- READY TO TRIP

PROCEDIMIENTO DIAGNOSTICO
- Conectar Ekip TT
- LED CONTROL UNIDAD: todos los led del relé se deben encender
- INDICACION ULTIMA ACTUACION: si está presente en la memoria del relé
- LED: queda encendido mientras la unidad TT permanezca conectada con el relé
- LISTO PARA LA ACTUACION



LED Ekip TT	
Verde Green Grün Vert Verde	Rosso Red Rot Rouge Rojo
Dispositivo acceso Device ON Einrichtung eingeschaltet Dispositif allumé Dispositivo encendido	Sostituire batterie Change battery Batterie ersetzen Remplacer batteries Sustituir baterías



X3		
1	WS B	System Bus - Modbus
2	WS A	System Bus - Modbus
3	24V (-)	Auxiliary supply
4	24V (+)	Auxiliary supply
5	Not used	
6	Not used	
7	S51/S	Overload contact
8	S51/S	Overload contact

X4		
1	WI L	Reserved LOCAL Bus
2	WI H	Reserved LOCAL Bus
3	PTC	Motor thermistor
4	PTC	Motor thermistor
5	GND Coil	Connect to pin 2 of PR212/CI
6	Set Coil	Connect to pin 7 of PR212/CI
7	Reset Coil	Connect to pin 9 of PR212/CI
8	Supply Coil	Connect to pin 12 of PR212/CI

- Per tutte le connessioni con cavo schermato utilizzare ad esempio il tipo Belden 3106 A, provvedendo a connettere lo schermo a terra in prossimità del dispositivo/ accessorio esterno.
- For all shielded connections use, for example, Belden 3106 A cable. The shield must be connected to earth near external devices/accessories.
- Für alle Anschlüsse mit abgeschirmtem Kabel zum Beispiel Kabel vom Typ Belden 3106 A verwenden und den Schirm in der Nähe des Geräts/externen Zubehörs mit Erde verbinden.
- Pour toutes les connexions par câble blindé, utiliser par exemple le type Belden 3106 A, en raccordant le blindage à la terre à proximité du dispositif / accessoire extérieur.
- Para todos los conexionados con cable apantallado utilizar, por ejemplo el tipo Belden 3106 A, conectando la pantalla a tierra en proximidad del dispositivo/accesorio exterior.

-PTC mod. Siemens/Matsushita B59355-M130-A70 o equivalente. Lunghezza massima del collegamento 50 m. Protezione con intervento 1 s.
-Temperature dependent resistor (PTC) type Siemens/Matsushita B59355-M130-A70 or similar. Max connection length = 50 m. C.B. tripping time 1 s.
- PTC-Halbleiterfühler Mod. Siemens/Matsushita B59355-M130-A70 oder an einen gleichwertigen Fühler. Maximale Länge der Verbindung 50 m. Auslösezeit der Schutzfunktion: 1 s.
-PTC mod. Siemens/Matsushita B59355-M130-A70 ou équivalente. Longueur maxi du raccordement 50 m. Protection avec temps de déclenchement 1 s.
-PTC mod. Siemens/Matsushita B59355-M130-A70 o equivalente. Longitud máxima del conexionado 50 m. Protección con tiempo de actuación interruptor 1 s