


LOVATO ELECTRIC S.P.A.

24020 GORLE (BERGAMO) ITALIA
VIA DON E. MAZZA, 12
TEL. 035 4282111
TELEFAX (Nazionale): 035 4282200
TELEFAX (International): +39 035 4282400
E-mail info@LovatoElectric.com
Web www.LovatoElectric.com



- ① TEMPORIZZATORI PER FISSAGGIO SU GUIDA DIN
- ② DIN MOUNT TIME RELAYS
- ③ ZEITRELAIS FÜR BEFESTIGUNG AUF DIN-SCHIENE
- ④ TEMPORIZADORES PARA FIJACION EN GUIA DIN

BT2N - ATD - DRPL - BTM - BTM1


- **BT2N** Temporizzatore per avviatori, con tempi di avviamento e transizione regolabili, monoscala, bitensione, 2 rele' con 1 contatto in scambio.
- **ATD** Temporizzatore ritardato alla diseccitazione, multiscale, monotensione, 1 contatto in scambio.
- **DRPL** Rele' programmabile pausa-lavoro a tempi indipendenti, multiscale, multitemensione, 2 contatti in scambio.
- **BTM** Temporizzatore programmabile, multifunzione, multiscale, multitemensione, 2 rele' con 1 contatto in scambio.
- **BTM1** Temporizzatore programmabile, multifunzione, multiscale, multitemensione, 1 rele' con 1 contatto in scambio.

- **BT2N** Electronic time relay for starters, with adjustable start and transition time, single scale, dual-voltage, 2 relays with 1 change-over contact each.
- **ATD** Electronic time relay OFF delay, multiscale, single voltage, 1 change-over contact.
- **DRPL** Programmable asymmetrical recycle with double adjustable delay, multiscale, multivoltage, 2 change-over contacts.
- **BTM** Electronic programmable time relay, multiscale, multifunction, multivoltage, 2 relays with 1 change-over contact each.
- **BTM1** Electronic programmable time relay, multiscale, multifunction, multivoltage, 1 relay with 1 change-over contact.

- **BT2N** Für Stern-dreieck- und Ständeranlasser, Umschalt- und Pausezeit einstellbar, 1 Zeitbereich, 2 Versorgungsspann., 2 Ausgangskontakte.
- **ATD** Rückfallverz. ohne Hilfspann., Multizeit, 1 Versorgungsspann., 1 Ausgangskontakt.
- **DRPL** Taktgeber, Multizeit, Multispannung, 2 Ausgangskontakte.
- **BTM** Multifunktion, Multizeit, Multispannung, 2 Ausgangskontakte
- **BTM1** Multifunktion, Multizeit, Multispannung, 1 Ausgangskontakte

- **BT2N** Temporizador para arrancadores, con tiempos de arranque y transición ajustables, monoescala, bitensión, 2 relés con 1 contacto conmutado.
- **ATD** Temporizador retardado a la desexcitación, multiscale, monotensión, 1 contacto conmutado.
- **DRPL** Relé programable pausa-funcionamiento con tiempos independientes, multiscale, multitempensión, 2 contactos conmutados.
- **BTM** Temporizador programable, multifunción, multiscale, multitempensión, 2 relés con 1 contacto conmutado.
- **BTM1** Temporizador programable, multifunción, multiscale, multitempensión, 1 relé con 1 contacto conmutado.

DATI TECNICI

- Riepilogo a pag.4

MONTAGGIO

- Fissaggio a scatto su profilato ad omega da 35mm, secondo DIN EN 50022
- Posizione d'installazione: qualsiasi

CONNESSIONI

- Attacchi: vite a serrafilo imperdibile (M3,5)
- Sezione max conduttori:
2x2,5 mm² filo rigido;
2x1,5 mm² filo flessibile preparato (anche con puntalini preisolati)
- Coppia di serraggio: 0,8÷1,2 Nm

REGOLAZIONE TEMPI

- Mediante cacciavite, sul frontale, seguendo l'apposita scala graduata

IMPOSTAZIONE CAMPO SCALA

- (ATD, DRPL, BTM, BTM1)
- Mediante dip-switch sul frontale, secondo le configurazioni riportate a pag.2-3.

PROGRAMMAZIONE DELLE FUNZIONI




- (BTM, BTM1)
- Mediante dip-switch sul frontale, secondo le configurazioni riportate a pag.3.

SCHEMA DI COLLEGAMENTO

- Gli schemi di pag. 2-3 illustrano, per ciascun apparecchio, la funzione e la numerazione dei morsetti.

DIAGRAMMA FUNZIONALE

- I diagrammi di pag. 2-3 mostrano, nei vari casi, lo stato dei contatti in uscita durante il funzionamento.

-  = Tensione di comando presente
-  = Contatto chiuso
-  = Contatto aperto

Avvertenze

- Variazioni del campo scala e delle funzioni risultano efficaci solo se eseguite a temporizzatore disalimentato.

ATTENZIONE!!

Questo apparecchio deve essere installato da personale qualificato, nel rispetto delle vigenti normative impiantistiche, allo scopo di evitare danni a persone o cose. I prodotti descritti in questo documento sono suscettibili in qualsiasi momento di evoluzioni o di modifiche. Le descrizioni ed i dati a catalogo non possono pertanto avere nessun valore contrattuale.

TECHNICAL DATA

- Summary on page 4

INSTALLATION

- Snap on to standard mounting rail 35mm, according to DIN EN 50022
- Mounting position: any

CONNECTIONS

- Terminals: screw (M3,5)
- Max wire cross-section:
2x2,5 mm² solid;
2x1,5 mm² finely stranded (also with insulated ferrule)
- Tightening torque: 0.8-1.2 Nm

TIME SETTING

- Time can be set by screwdriver at the front panel (graduated scale)

TIME RANGE SETTING (ATD, DRPL, BTM, BTM1)

- Time range value can be set by dip-switches at the front panel, according to the configurations shown at pages 2-3.

FUNCTION CHOICE (BTM, BTM1)




- Functions can be programmed by dip switches at the front panel, according to the configurations shown at page 3.

WIRING DIAGRAM

- Respect the function and the numbering of the terminals, as per diagrams at pages 2-3.

FUNCTIONAL DIAGRAM

- The state of the output contacts is shown for each time relay on pages 2-3 (diagrams).

-  = Operating voltage ON
-  = Contact closed
-  = Contact open

Notes

- Changes of time range and function only become effective if carried out without supply voltage.

WARNING!!

This equipment is to be set up by trained personnel, complying to current standards, to avoid damages or safety hazards. Products illustrated herein are subject to alterations and changes without prior notice. Technical data and descriptions in the catalogue are accurate, to the best of our knowledge, but no liabilities for errors, omissions or contingencies arising therefrom are accepted.

TECHNISCHE DATEN

- Siehe Seite 4

BEFESTIGUNG

- Schappbefestigung auf Schiene 35mm nach DIN EN50022
- Montagelage: belibig

ANSCHLÜSSE

- Anschlußschrauben: M 3,5
- Anschlußquerschnitte max:
2x2,5 mm² eindrähtig
2x1,5 mm² feindrähtig (auch mit Aderendhülse)
- Anziehdrehmoment 0,8÷1,2 Nm

EINSTELLUNG DER ZEIT

- Mit Schraubenzieher auf der Frontseite

WAHL DER ZEITBEREICHE (ATD, DRPL, BTM, BTM1)

- Durch DIP-SWITCH siehe Seite 2-3

WAHL DER FUNKTION (BTM, BTM1)




- Durch DIP-SWITCH siehe Seite 3

ANSCHLUSSSCHEMA

- Siehe Seite 2+3

FUNKTIONSABLAUF

- Siehe Seite 2+3 wobei:

-  = Zeitrelais erregt
-  = Schaltglied geschlossen
-  = Schaltglied geöffnet

Anwendungshinweise

- Änderung des Zeitbereichs u.der Funktion werden nur wirksam, wenn diese im spannungslosen Zustand vorgenommen werden.

ACHTUNG!

Um Personen- und Sachschaden zu vermeiden, darf dieses Gerät nur von fachkundigem Personal, unter Berücksichtigung der jeweils geltenden Vorschriften, installiert werden. Die in diesem Katalog gezeigten Produkte können jederzeit ohne Vorankündigung geändert werden. Technische Daten und Beschreibungen sind richtig und wurden nach bestem Wissen und Gewissen erstellt.

DATOS TÉCNICOS

- Tabla sintética en pag. 4

INSTALACIÓN

- Fijación a presión en perfil Omega de 35mm, conforme DIN EN 50022
- Posición de instalación: cualquiera

CONEXIONES

- Terminales: tornillo de estribo imperdible (M3,5)
- Sección máx. conductores:
2x2,5 mm² cable rígido;
2x1,5 mm² cable flexible preparado (también con terminales preaislados)
- Par de ajuste: 0,8÷1,2 Nm

AJUSTE TIEMPOS

- Mediante destornillador, en el frente, con referencia a la escala graduada

CONFIGURACIÓN CAMPO ESCALA (ATD, DRPL, BTM, BTM1)

- Mediante microinterruptores en el frente, según las configuraciones de pag. 2-3.

PROGRAMACIÓN DE LAS FUNCIONES (BTM, BTM1)




- Mediante microinterruptores en el frente, según las configuraciones de pag. 3.

ESQUEMA DE CONEXIÓN

- Los esquemas de las pag. 2-3 ilustran las funciones y numeración de los terminales para cada uno de los aparatos.

DIAGRAMA FUNCIONAL

- Los diagramas de las pag. 2-3 muestran el estado de los contactos de salida durante el funcionamiento, en cada caso.

-  = Tensión de mando presente
-  = Contacto cerrado
-  = Contacto abierto

Advertencias

- Las variaciones del campo de escala y las funciones resultan eficaces sólo cuando se realizan con el temporizador desconectado de la alimentación.

ATENCIÓN:

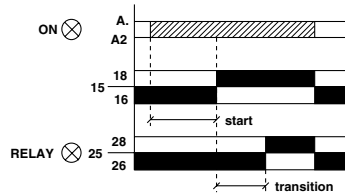
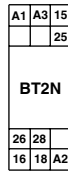
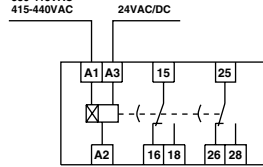
Este aparato debe ser instalado por personal cualificado, de conformidad con las normativas de instalación vigentes, a fin de evitar daños personales o materiales. Los productos descritos en esta publicación pueden ser perfeccionados o modificados en cualquier momento. Por tanto, las descripciones y los datos del catálogo no pueden tener algún valor contractual.

BT2N

Per avviatori
For starters
Sterndreieck- und Ständeranlasser
Para arrancadores



48VAC/DC
110-127VAC
220-240VAC
380-415VAC
415-440VAC



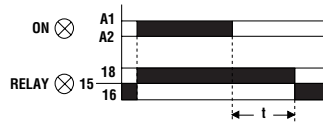
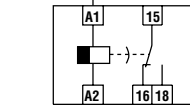
Codice ordinaz. Order code Bestellbez. Código pedido	t START	t TRANSITION	A1 A3 A2
31 BT2N 6S 48 31 BT2N 12S 48 31 BT2N 30S 48 31 BT2N 60S 48	0.6-6s 1.2-12s 3-30s 6-60s	20-300ms	A1-A2 = 48VAC/DC A3-A2 = 24VAC/DC
31 BT2N 6S 110 31 BT2N 12S 110 31 BT2N 30S 110 31 BT2N 60S 110	0.6-6s 1.2-12s 3-30s 6-60s	20-300ms	A1-A2 = 110-127VAC A3-A2 = 24VAC/DC
31 BT2N 6S 220 31 BT2N 12S 220 31 BT2N 30S 220 31 BT2N 60S 220	0.6-6s 1.2-12s 3-30s 6-60s	20-300ms	A1-A2 = 220-240VAC A3-A2 = 24VAC/DC
31 BT2N 6S 380 31 BT2N 12S 380 31 BT2N 30S 380 31 BT2N 60S 380	0.6-6s 1.2-12s 3-30s 6-60s	20-300ms	A1-A2 = 380-415VAC A3-A2 = 24VAC/DC
31 BT2N 6S 440 31 BT2N 12S 440 31 BT2N 30S 440 31 BT2N 60S 440	0.6-6s 1.2-12s 3-30s 6-60s	20-300ms	A1-A2 = 415-440VAC A3-A2 = 24VAC/DC

ATD

Ritardo alla diseccitazione / Off delay
Rückfallverzögert / Retardo a la desexcitación

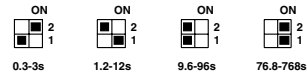


24VAC/DC
48VAC/DC
110-127VAC
220-240VAC



Codice ordinaz. Order code Bestellbez. Código pedido	t DELAY	A1 A2
31 ATD 24	0.3s - 768s programmable	A1-A2 = 24VAC/DC
31 ATD 48		A1-A2 = 48VAC/DC
31 ATD 110		A1-A2 = 110-127VAC
31 ATD 220		A1-A2 = 220-240VAC

SCelta DEL CAMPO SCALA (t DELAY) / TIME RANGE SETTING (t DELAY)
WAHL DER ZEITBEREICH (t DELAY) / SELECCIÓN CAMPO ESCALA (t DELAY)

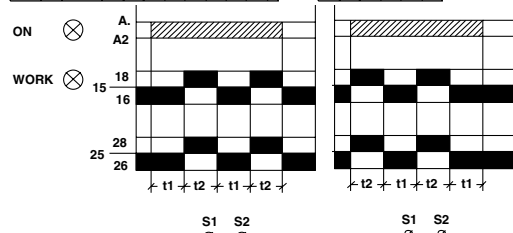
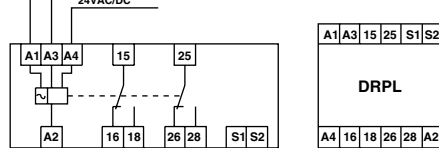


DRPL

Pausa-lavoro a tempi indipendenti
Asymmetrical recycle multiscale
Taktgeber
Pausa-funcionamiento con tiempos independientes



60-220-240VAC
48-110-127VAC
24VAC/DC

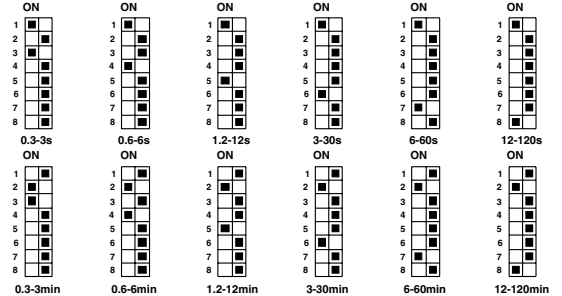


Inizio pausa
Beginning with pause
Pause beginnend
Inicio pausa

Inizio lavoro
Beginning with work
Impuls beginnend
Inicio funcionamiento

Codice ordinaz. Order code Bestellbez. Código pedido	Pause t1 Work t2	A1 A3 A2 A4
31 DRPL 220	0.3s - 120min programmable	A4-A2 = 24VAC/DC A3-A2 = 110-127VAC A1-A2 = 220-240VAC
31 DRPL 60	0.3s - 120min programmable	A4-A2 = 24VAC/DCC A3-A2 = 48VAC/DC A1-A2 = 60VAC/DC

SCelta DEL CAMPO SCALA (t DELAY) / TIME RANGE SETTING (t DELAY)
WAHL DER ZEITBEREICH (t DELAY) / SELECCIÓN CAMPO ESCALA (t DELAY)

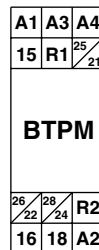
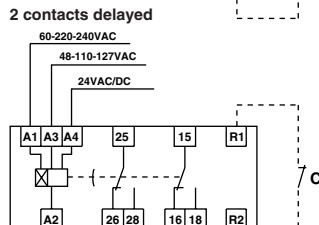
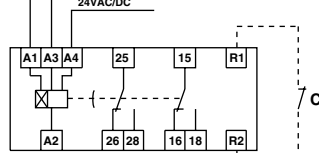


BTPM

Programmabile, multiscale, multifunzione
Programmable, multiscale, multifunction
Programmierbar: U-t-Fkt.
Programable, multiescala, multifunción

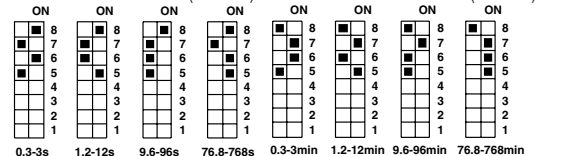


60-220-240VAC
48-110-127VAC
24VAC/DC



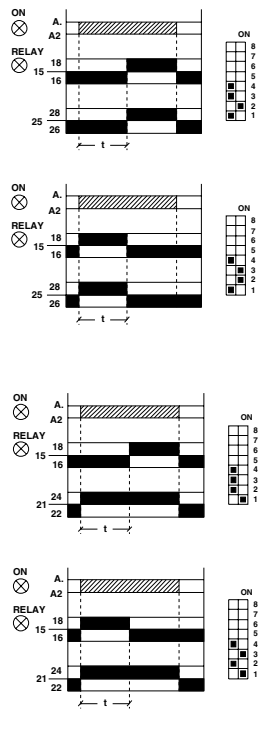
Codice ordinaz. Order code Bestellbez. Código pedido	t DELAY	A1 A3 A2 A4
31 BTPM 220	0.3s - 768min programmable	A4-A2 = 24VAC/DC A3-A2 = 110-127VAC A1-A2 = 220-240VAC
31 BTPM 60	0.3s - 768min programmable	A4-A2 = 24VAC/DC A3-A2 = 48VAC/DC A1-A2 = 60VAC/DC

SCelta DEL CAMPO SCALA (t DELAY) / TIME RANGE SETTING (t DELAY)
WAHL DER ZEITBEREICH (t DELAY) / SELECCIÓN CAMPO ESCALA (t DELAY)

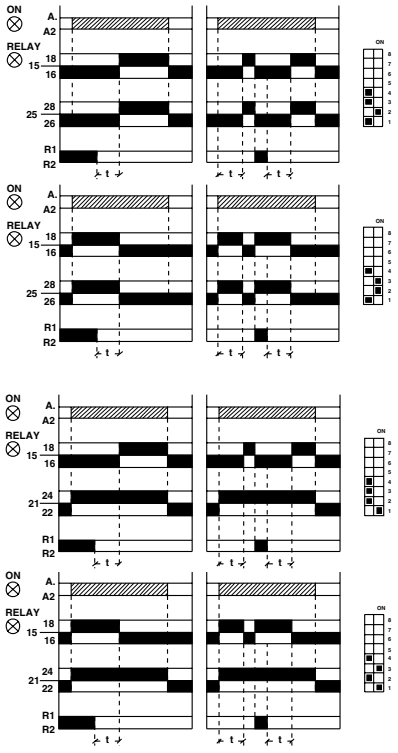


SCELTA DELLE FUNZIONI	FUNCTION SETTING	WAHL DER FUNKTION	SELECCIÓN DE LAS FUNCIONES
<p>ON 1 contatto ist. + 1 contatto rit. 2 1 contact inst. + 1 contact delayed 1 1 Wechsler verz. + 1 Wechsler unverz. 1 cont. instantáneo + 1 retardado</p>	<p>ON 2 contatti rit. 2 2 contact delayed 1 2 Wechsler verzögert 2 contactos retardado</p>	<p>ON 3 Inversione relè Relay energization Einschaltwischend Inversión relés</p>	<p>ON 4 Intermittenza Pulsing Blinkend Intermitencia</p>

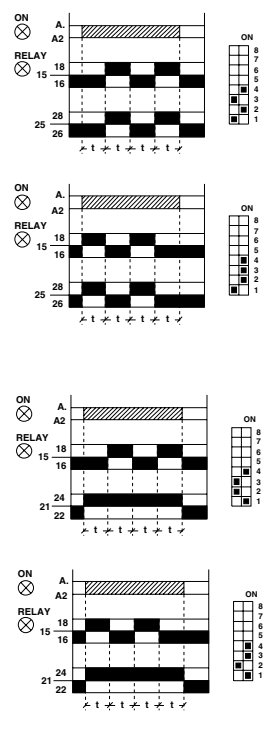
Ritardo all'eccitazione
 Delay on operate
 Anzugverzögert
 Retardo a la excitación



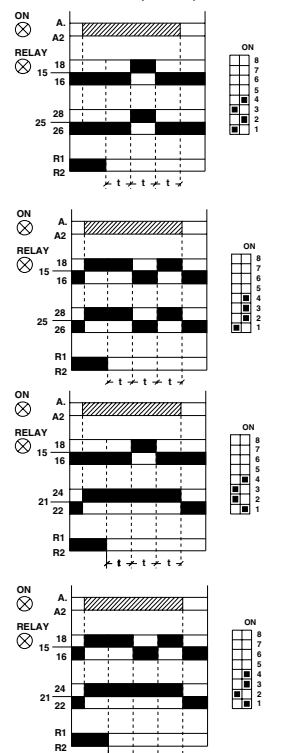
Ritardo all'apertura di un contatto esterno (R1-R2)
 Delay on opening of remote contact (R1-R2)
 Rückfallverzögert mit Hilfsspannung (R1-R2)
 Retardo a la apertura de un contacto externo (R1-R2)



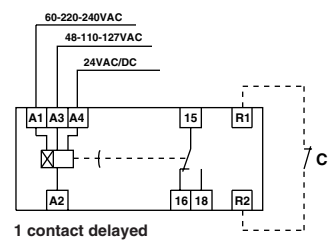
Intermittenza
 Pulsing
 Blinkend
 Intermitencia



Intermittenza all'apertura di un contatto esterno (R1-R2)
 Pulsing on opening of remote contact (R1-R2)
 Blinkend mit Hilfsspannung (R1-R2)
 Intermitencia a la apertura de un contacto externo (R1-R2)



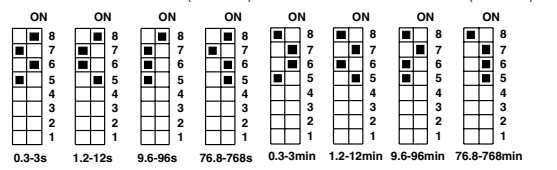
BTPM1



A1	A3	A4
15	R1	
BTPM1		
		R2
16	18	A2

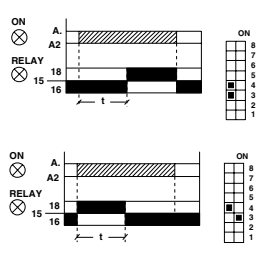
Codice ordinaz. Order code Bestellbez. Código pedido	t DELAY	
31 BTPM1 220	0.3s - 768min programmable	A4-A2 = 24VAC/DC A3-A2 = 110-127VAC A1-A2 = 220-240VAC
31 BTPM1 60	0.3s - 768min programmable	A4-A2 = 24VAC/DC A3-A2 = 48VAC/DC A1-A2 = 60VAC/DC

SCELTA DEL CAMPO SCALA (t DELAY) / TIME RANGE SETTING (t DELAY)
 WAHL DER ZEITBEREICH (t DELAY) / SELECCIÓN CAMPO ESCALA (t DELAY)

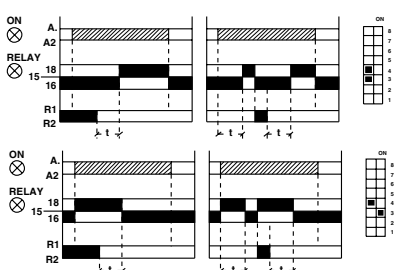


SCELTA DELLE FUNZIONI	FUNCTION SETTING	WAHL DER FUNKTION	SELECCIÓN DE LAS FUNCIONES
<p>ON 2 Dip-switch non utilizzati 1 Dip-switches not used Dip-Switch 1 und 2 Keine funktion Microinterruptores no utilizados</p>	<p>ON 3 Inversione relè Relay energization (immediate) Pulsing Inversión relés</p>	<p>ON 4 Intermittenza Einschaltwischend Blinkend Intermitencia</p>	

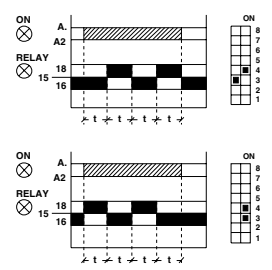
Ritardo all'eccitazione
 Delay on operate
 Anzugverzögert
 Retardo a la excitación



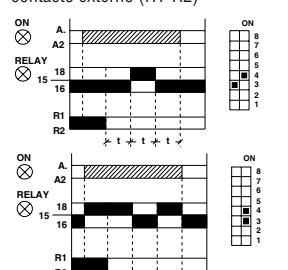
Ritardo all'apertura di un contatto esterno (R1-R2)
 Delay on opening of remote contact (R1-R2)
 Rückfallverzögert mit Hilfsspannung (R1-R2)
 Retardo a la apertura de un contacto externo (R1-R2)



Intermittenza
 Pulsing
 Blinkend
 Intermitencia

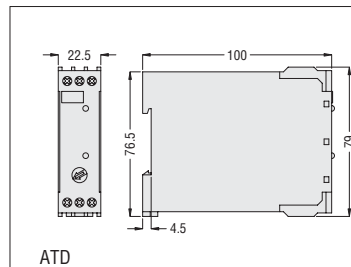


Intermittenza all'apertura di un contatto esterno (R1-R2)
 Pulsing on opening of remote contact (R1-R2)
 Blinkend mit Hilfsspannung (R1-R2)
 Intermitencia a la apertura de un contacto externo (R1-R2)



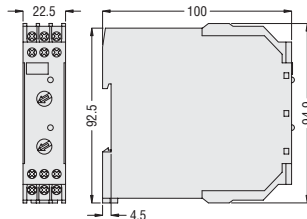
DATI TECNICI
TECHNICAL DATA
TECHNISCHE DATEN
DATOS TÉCNICOS

DIMENSIONI



ATD

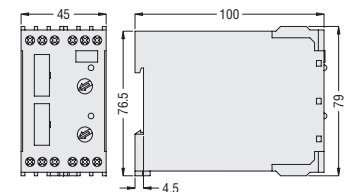
DIMENSIONS



BT2N-BTPM-BTPM1

MASSE

DIMENSIONES



DRPL

		(I)		(BB)		(D)		(E)		BT2N...		DRPL 220		BTPM 220		BTPM 60			
		Per avvisori		Ritardo alla disaccensione		Pausa-Lavoro a tempi indipendenti		Programmabile, multiscale e multifunz.		Programmabile, multiscale e multifunz.		Programmabile, multiscale e multifunz.		Programmabile, multiscale e multifunz.		Programmabile, multiscale e multifunz.			
		For starters		Off delay		Asymmetrical recycle, multiscale		Programmabile, multiscale, multifunction		Programmabile, multiscale, multifunction		Programmabile, multiscale, multifunction		Programmabile, multiscale, multifunction		Programmabile, multiscale, multifunction			
		Für Sternkreis		Rückfallverz. ohne Hiltsspann.		Taktgeber		Multifunktion - Multizett		Multifunktion - Multizett		Multifunktion - Multizett		Multifunktion - Multizett		Multifunktion - Multizett			
		Para arrancadores		Retardo a la desaccabiación		Pausa-funcionamiento con tiempos ind.		Programable, multiscale, multifunction.		Programable, multiscale, multifunction.		Programable, multiscale, multifunction.		Programable, multiscale, multifunction.		Programable, multiscale, multifunction.			
								IEC 60255-5 IEC 61812-1 EN 61812-1											
								cULus											
								Normas de referencia											
								Homologaciones											
								CIRCUITO DE MANDO											
								STEUERSCHROMKREIS											
								Tensione nominale di alimentazione (Us)		24VAC/DC 48VAC/DC 110-127VAC 220-240VAC (multivoltage)		24VAC/DC 110-127VAC 220-240VAC (multivoltage)		24VAC/DC 110-127VAC 220-240VAC (multivoltage)		24-48-60VAC/DC 24VAC/DC 110-127VAC 220-240VAC (multivoltage)			
								Frequenza nominale		50-60 Hz									
								Limiti di funzionamento		0.85 - 1.1 Us									
								Potenza assorbita (max)		15.6VA AC - 1.63W DC									
								CIRCUITO DI TEMPORIZZAZIONE											
								CIRCUITO DE TEMPORIZACIÓN											
								Campi di regolazione tempo		start time: 0.3-3s 0.6-6s 1.2-12s 9.6-96s 76.8-768s (multiscale)		0.3-3s 0.6-6s/min 1.2-12s/min 9.6-96s 76.8-768s 0.3-3min 1.2-12min 9.6-96min 76.8-768min (multiscale)		0.3-3s 0.6-6s/min 1.2-12s/min 9.6-96s 76.8-768s 0.3-3min 1.2-12min 9.6-96min 76.8-768min (multiscale)		0.3-3s 0.6-6s/min 1.2-12s/min 9.6-96s 76.8-768s 0.3-3min 1.2-12min 9.6-96min 76.8-768min (multiscale)			
								Errori di predisposizione		±9%									
								Errori di ripetibilità		≤ ±0.5%									
								Errori dovuti alle variazioni di tensione		-0.3% (Us = 24VDC only)									
								Var. medie dei tempi impostati a -10°C rispetto alle condizioni 20°C a +60°C		+2% -3%									
								Durata minima del comando		200ms									
								Tempo di ripristino durante la temporizzazione a tempo scaduto		75ms 70ms									
								Tempo di immunità alle microinterruzioni		≥ 7ms									
								CONTATTI DI USCITA											
								CONTATTOS DE SALIDA											
								Composizione contatti		380VAC		2 relays - 1 changeover each		250VAC		2 relays - 1 changeover each		1 relay - 1 changeover	
								Max tensione di commutazione		8A		5A		8A		8A			
								Corrente termica nominale (Ith)		VAC 220 380 415* 440* A (AC15) 2.5 1.5 1.3 1*		AC15 DC14		AC15 DC14		AC15 DC14			
								Corrente di impiego		B300 - 30VDC 0.5A		B300 - 30VDC 0.5A		B300 - 30VDC 1A		B300 - 30VDC 1A			
								Designazione UL		UL designation		UL designation		UL designation		UL designation			
								Vita elettrica		Electrical life		Electrical life		Electrical life		Electrical life			
								Vita meccanica		Mechanical life		Mechanical life		Mechanical life		Mechanical life			
								ISOLAMENTO		INSULATION		INSULATION		INSULATION		INSULATION			
								Tensione nominale di isolamento		Rated insulation voltage		Rated insulation voltage		Rated insulation voltage		Rated insulation voltage			
								Tensione nominale di tenuta a impulso		Rated impulse withstand voltage		Rated impulse withstand voltage		Rated impulse withstand voltage		Rated impulse withstand voltage			
								Prova di tenuta in AC		AC dielectric test voltage		AC dielectric test voltage		AC dielectric test voltage		AC dielectric test voltage			
								Temperatura di impiego / stoccaggio		Operating temperature / storage		Operating temperature / storage		Operating temperature / storage		Operating temperature / storage			
								Materiale contenitore		Housing material		Housing material		Housing material		Housing material			
								Grado di protezione		Degree of protection		Degree of protection		Degree of protection		Degree of protection			
								Temperatura di impiego / stoccaggio		Operating temperature / storage		Operating temperature / storage		Operating temperature / storage		Operating temperature / storage			
								Materiale contenitore		Housing material		Housing material		Housing material		Housing material			
								Grado di protezione		Degree of protection		Degree of protection		Degree of protection		Degree of protection			

* Valori d'impiego garantiti dal ns. laboratorio prove / Operating values guaranteed by our laboratory test / Die Datenwerte sind von unserem Labor garantiert / Valores de uso garantizados por ns. laboratorio pruebas
cULus markings: Use 75°C Cu wire only. 2x 18-14 AWG Str; 2x 18-14 AWG Sol (except the combination 18+14); Torque: 9 Lb. In Max.