

Harmony Timer Relays

Near Field Communication and conventional Timer Relays

Harmony Timer Relays

Innovative, ergonomic and configurable offer with single or multifunction types

Harmony Timer are timing relays designed to time events in industrial automation systems by closing and opening contacts before, during, or after a set time period. They are designed for hard-wired logic automated systems to complement the functions of industrial programmable logic controllers (PLCs).

They are suitable for a wide range of applications, including:

- Machines: single machine, and industrial automation and processes
- Buildings: lighting control, access control door locks, roller shutters
- Water segment: pumping and irrigation systems
- HVAC: fans and centralized water systems

Depending on the product model, these relays support multiple time ranges.

> Modular DIN rail mounted timing relays



RE17, RENF, RE22

> Miniature plug-in timing relays



REXL

> Panel mounted/plug-in timing relays



RE48A

The Harmony Timer relays also feature:

- Wide power supply range from 24 to 240 V $\bar{\sim}$
- Single or multi timing ranges from 0.02 s to 999 hrs
- Screw or spring connection terminals
- Relay or solid-state output
- Conformity to IEC 61812-1 and EN 61812-1 standards
- UL, CSA, GL, RCM, EAC, CCC, and China ROHS compliance
- Easy to set up with wiring diagrams on the side of the product

Harmony RE22 Timing relays

Modular relays with unique features

- > Innovative: dial pointer LED indicator and diagnostic button to assist setup and troubleshooting
- > Compact and reliable
- > Energy efficient: simple to implement, operate, and maintain
- > Compliance with standards and certifications
- > QR code embedded in instruction sheet for easy setup



Dial pointer LED indicator

Diagnostic button

Harmony Timer Relays → A complete range of reliable and flexible offers

These timing relays enable simple automation cycles to be set up using wired logic. They can also be used to complement the functions of PLCs.

Relay
Relay outputs provide complete isolation between the supply circuit and the output. It is possible to have several output circuits.






Modular and DIN rail mounted		Miniature and plug-in		Analogue and panel-mounted/plug-in	
Screw type					
0.1 s to 999 h	Depending on model: <input type="checkbox"/> 7 ranges: 1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h <input type="checkbox"/> 7 ranges: 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 10 min <input type="checkbox"/> 7 ranges 0.5 s 1 s 3 s 10 s 30 s 100 s 300 s <input type="checkbox"/> 1 range 30 s <input type="checkbox"/> 10 ranges: 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h	<input type="checkbox"/> 7 ranges: 0.1 s...1 s, 1 s...10 s, 0.1 min...1 min, 1 min...10 min, 0.1 h...1 h, 1 h...10 h, 10 h...100 h	<input type="checkbox"/> 14 ranges: 1.2 s, 3 s, 12 s, 30 s, 120 s, 300 s, 12 min, 30 min, 120 min, 300 min, 12 h, 30 h, 120 h, 300 h		
RENF	RE22	REXL	RE48A		
23	24	26	27		

Definitions

The following definitions explain relay operation:

■ **Relay output:**

This is the most common type of output. When the relay is energized, the moving armature is attracted by the coil and so actuates the contacts, which change state. When the relay is de-energized, both the armature and the contacts revert to their initial position. This type of output allows complete isolation between the power supply and the output. There are three types of output contact:

CO: Changeover contact, i.e. when the relay is de-energized, the circuit between the common point C and NC is closed and when the relay is operating (coil energized), it closes the circuit between the common point C and the NO contact.	
NC: A contact that is closed without being actuated is called a Normally Closed (NC) contact.	
NO: A contact that closes when actuated is called a Normally Open (NO) contact.	

■ **Solid state output:**

This output is entirely electronic and involves no moving parts; service life is therefore increased.

■ **Breaking capacity:**

The current value that a contact is capable of breaking in specified conditions.

■ **Mechanical durability:**

The number of mechanical operating cycles of the contact or contacts.

■ **Minimum switching capacity** (or minimum breaking capacity):

This is the minimum required current that can flow through the contacts of a relay.

■ **X1/X2/Y1/Gate control input:**

Control input allows timing in progress to be interrupted without it being reset.

Functions

Timing functions are identified by letters. For the complementary functions, select the main timing function using the selection dial in the front panel; refer to functional diagrams for connection.

Main timing functions	Complementary functions (1)	Definitions
A (2)		Power on-delay relay
	Ac	On-delay and off-delay relay with control signal
	Act	On-delay and off-delay relay with control signal and pause/summation control signal
	Ad	Pulse delayed relay with control signal
	Ah	Pulse delayed relay (single cycle) with control signal
	Ak	Asymmetrical on-delay and off-delay relay with control signal
	Akt	Asymmetrical on-delay and off-delay relay with control signal and pause/summation control signal
	At	Power on-delay relay with pause/summation control signal
	Aw	Power on-delay relay with retrigger/restart control signal
B (2)		Single interval relay with control signal
	Bw	Double interval relay with control signal
C (2)		Off-delay relay with control signal
	Ct	Off-delay relay with control signal and pause/summation control signal
D (2)		Symmetrical flashing relay (starting pulse-off)
	Di (2)	Symmetrical flashing relay (starting pulse-on)
	Dit	Symmetrical flashing relay (starting pulse-on) with pause/summation control signal
	Diw	Symmetrical flashing relay (starting pulse-on) with retrigger/restart control signal
	Dt	Symmetrical flashing relay (starting pulse-off) with pause/summation control signal
	Dw	Symmetrical flashing relay (starting pulse-off) with retrigger/restart control signal
H (2)		Interval relay
	He	Pulse-on de-energization
	Ht	Interval relay with pause/summation control signal
	Hw	Interval relay with retrigger/restart control signal
K		Delay on de-energization (without auxiliary supply)
L (2)		Asymmetrical flashing relay (starting pulse-off)
	Li (2)	Asymmetrical flashing relay (starting pulse-on)
	Lit	Asymmetrical flashing relay (starting pulse-on) with pause/summation control signal
	Lt	Asymmetrical flashing relay (starting pulse-off) with pause/summation control signal

(1) Complementary functions enhance the main timing functions.
 Example: **Ac**: timing after closing and opening of control contact.
 (2) The most commonly used timing functions.

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Definitions (continued)		
Main timing functions	Complementary functions (1)	Definitions
N		Safe-guard relay
O		Delayed Safe-guard relay
P		Pulse delayed relay with fixed pulse length
	Pt	Pulse delayed relay with fixed pulse length and pause/summation control signal
Q		Star-delta relay (2 NO outputs with same common)
	Qc	Star-delta relay (1 CO output)
	Qe	Star-delta relay (1 NC + 1 NO outputs with split common)
	Qg	Star-delta relay (2 CO outputs with same common)
	Qgt	Star-delta relay (2 CO outputs with same common) with pause/summation control signal
	Qt	Star-delta relay (2 CO outputs with split common)
	Qtt	Star-delta relay (2 CO outputs with split common) with pause/summation control signal
	T	TI
Tt		Retriggerable bistable relay with control signal on
W		Interval relay with control signal off
	Wt	Interval relay with control signal off and pause/summation control signal

Selection table

Selection criteria

- **Functions** (on-delay or off-delay, counter, flashing, etc.)
- **Supply voltage** (example: $\sim 12\text{ V} \dots 240\text{ V}$)
- **Timing range** for a timing relay (for example; 0.05 s... 100 h)
- **Type of output** (contact or solid state) and required **Number of contacts**
- **Rated current** or **Breaking capacity** of contacts, expressed in Amperes. This is the maximum current that may flow through the contacts.

Functions	Timing range	Supply voltage	Type of output	Rated current	Relay		
A	0.1 s...100 h	$\text{---} 12\text{ V}$	2 CO contacts	5 A	REXL2TMJD		
			4 CO contacts				
		$\text{---} 24\text{ V}$	2 CO contacts		REXL2TMBD		
			4 CO contacts		REXL4TMBD		
		$\sim 24\text{ V}$	2 CO contacts		REXL2TMB7		
			4 CO contacts		REXL4TMB7		
		$\sim 120\text{ V}$	2 CO contacts		REXL2TMF7		
			4 CO contacts		REXL4TMF7		
		$\sim 230\text{ V}$	2 CO contacts		REXL2TMP7		
			4 CO contacts		REXL4TMP7		
		$\approx 24 \dots 240\text{ V}$	1 solid state output	0.7 A	RE17LAMW		
					RE17LAMWS		
			0.02 s...300 h	$\approx 24 \dots 240\text{ V}$	2 CO contacts	5 A	RE48ATM12MW
		A, Ac, At, B, Bw, C, D, Di, H, Ht	0.1 s...100 h	$\approx 24 \dots 240\text{ V}$	1 solid state output	0.7 A	RE17LMBM
1 CO contact	8 A				RE17RMJU		
$\approx 12\text{ V}$					RE17RMMW		
					RE17RMMWS		
$\text{---} 24\text{ V} / \sim 24 \dots 240\text{ V}$					RE17RMMU		
					RE17RMMUS		
				2 CO contacts		RE22R2MMU	
							RE22R2MJU
$\approx 12\text{ V}$						RE22R2MMW	

(1) Complementary functions enhance the main timing functions.
 Example: **Ac**: timing after closing and opening of control contact.
Note: References ending with "S" are spring terminals; references without "S" are screw terminals.
 Example: RE17LAMWS is timing relay with spring terminal and RE17LAMW is timing relay with screw terminal

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Selection table (continued)						
Functions	Timing range	Supply voltage	Type of output	Rated current	Relay	
A, At	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RAMU	
			2 CO contacts		RE17RAMUS RE22R2AMU	
A, Aw	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1AMR	
			2 CO contacts		RE22R2AMR	
A, At, Aw	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1MAMR	
A, At, B, C, D, Di, H, Ht	0.1 s...10 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RMEMU	
					RE17RMEMUS	
A, B, C, Di	0.02 s...300 h	≈ 24...240 V	2 CO contacts	5 A	RE48AML12MW	
A, Ac, Ad, Ah, Ak, At, B, Bw, C, D, Di, Dt, Dit, H, Ht, L, Li, Lt, Lit, N, O, P, Pt, Qt, Qtt, TI, Tt, W	0.1 s...999 h	≈ 24...240 V	2 CO contacts	8 A	RENF22R2MMW	
A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, Qg, Qgt, Qt, Qtt, W, Wt	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2MYMR	
A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, W, Wt, Ac, Act	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1MYMR	
A1, A2, H1, H2	0.02 s...300 h	≈ 24...240 V	2 CO contacts	5 A	RE48AMH13MW	
Ac	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2ACMR	
Ac, Act	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1ACMR	
Ad, Ah, N, O, P, Pt, TI, Tt, W	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RMXMU	
			2 CO contacts		RE17RMXMUS RE22R2MXMU	
Ak, Akt	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1AKMR	
B	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RBMU	
C	0.1 s...100 h	≈ 24...240 V	1 solid state output	0.7 A	RE17LCBM	
					RE17LCBMS	
			1 CO contact		8 A	RE17RCMU RE17RCMUS
	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2CMR	
C, Ct	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1CMR	
D, Dw	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1DMR	
			2 CO contacts		RE22R2DMR	
H	0.1 s...100 h	≈ 24...240 V	1 solid state output	0.7 A	RE17LHBM	
H, Hw	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1HMR	
			2 CO contacts		8 A	RE22R2HMR
H, Ht	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RHMU	
					RE17RHMUS	
K	0.05 s...10 min	≈ 24...240 V	1 CO contact	5 A	RE22R1KMR	
			2 CO contacts		RE22R2KMR	
K, He	0.05 s...300 s	≈ 24...240 V	1 CO contact	5 A	RE22R1MKMR	
L, Li	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE17RLMU	
					RE17RLMUS	
			1 solid state output		0.7 A	RE17LLBM
					RE17LLBMS	
	0.02 s...300 h	≈ 24...240 V	2 CO contacts	5 A	RE48ACV12MW	
L, Lt, Li, Lit	0.05 s...300 h	≈ 24...240 V	1 CO contact	8 A	RE22R1MLMR	
Q	0.1 s...100 h	≈ 24 V/∼ 24...240 V	1 CO contact	8 A	RE22R1QMU	
		≈ 230...240 V, ∼ 380...440 V			RE22R1QMQ	
Qc	0.05 s...300 s	≈ 24 V, ∼ 24...240 V	1 CO contact	8 A	RE22R1QCMU	
Qe	0.3 s...30 s	≈ 380...415 V	2 CO contacts	8 A	RE22R2QEMT	
		≈ 24...240 V			RE22R2QEMR	
Qg	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2QGMR	
Qt	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2QTMR	
W, Wt	0.05 s...300 h	≈ 24...240 V	2 CO contacts	8 A	RE22R2MWMR	

Note: References ending with "S" are spring terminals; references without "S" are screw terminals.

Example: RE17LAMWS is timing relay with spring terminal and RE17LAMW is timing relay with screw terminal

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Modular timing relays with diagnostic button and dial pointer, relay output, width 22.5 mm/0.886 in.

Output 1 CO and 2 CO contacts

- Multifunction, dual function, or single function
- Multiple timing ranges (up to 10 switchable ranges)
- Multivoltage
- 1 or 2 relay outputs
- Screw terminals
- State indication by LED
- Option of supplying a load in parallel
- 3-wire sensor control option
- Diagnostic button (1) and dial pointer LED indicator



RE22R2QTMR



RE22R2KMR



RE22R2QEMR



RE22R2HMR



RE22R1MYMR

Modular timing relays with relay output

Single function

Timing ranges	Functions	No. of relay outputs	Voltages	Reference	Weight
			V		kg/lb
10 selectable timing ranges 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h	Ac	2	~ 24...240	RE22R2ACMR	0.105/ 0.231
	Qg	2	~ 24...240	RE22R2QGMR	0.105/ 0.231
	Qt	2	~ 24...240	RE22R2QTMR	0.105/ 0.231
7 selectable timing ranges 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 10 min	K	1	~ 24...240	RE22R1KMR (1) (2)	0.100/ 0.220
		2	~ 24...240	RE22R2KMR (1) (2)	0.100/ 0.220
7 selectable timing ranges 0.5 s, 1 s, 3 s, 10 s, 30 s, 100 s, 300 s	Qc	1	~ 24/~ 24...240	RE22R1QCMU	0.080/ 0.176
	Single range selection 30 s	Qe	2	~ 24...240	RE22R2QEMR
		2	~ 380...415	RE22R2QEMT	0.090/ 0.198

Dual function

10 selectable timing ranges 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h	A, Aw	1	~ 24...240	RE22R1AMR	0.100/ 0.220
		2	~ 24...240	RE22R2AMR	0.105/ 0.231
	C, Ct	1	~ 24...240	RE22R1CMR	0.100/ 0.220
	C	2	~ 24...240	RE22R2CMR	0.105/ 0.231
	Ac, Act	1	~ 24...240	RE22R1ACMR	0.100/ 0.220
	Ak, Akt	1	~ 24...240	RE22R1AKMR	0.100/ 0.220
	D, Dw	1	~ 24...240	RE22R1DMR	0.100/ 0.220
		2	~ 24...240	RE22R2DMR	0.105/ 0.231
	H, Hw	1	~ 24...240	RE22R1HMR	0.100/ 0.220
		2	~ 24...240	RE22R2HMR	0.105/ 0.231
Wt, W	2	~ 24...240	RE22R2MWMR	0.105/ 0.231	
7 selectable timing ranges 0.5 s, 1 s, 3 s, 10 s, 30 s, 100 s, 300 s	K, He	1	~ 24...240	RE22R1MKMR (1) (2)	0.100/ 0.220
	10 selectable timing ranges 1 s, 3 s, 10 s, 30 s, 100 s, 300 s, 30 min, 300 min, 30 h, 300 h	A, At, Aw	1	~ 24...240	RE22R1MAMR
A, At, Aw, Ac, Act, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, W, Wt,		1	~ 24...240	RE22R1MYMR	0.100/ 0.220
A, At, Aw, C, Ct, D, Dt, Dw, Di, Dit, Diw, H, Ht, Hw, Qg, Qgt, Qt, Qtt, W, Wt		2	~ 24...240	RE22R2MYMR	0.105/ 0.231
L, Li, Lt, Lit		1	~ 24...240	RE22R1MLMR	0.100/ 0.220

(1) The diagnostic button is not available for the K function related references (RE22R1KMR, RE22R2KMR, and RE22R1MKMR).

(2) 1 or 2 relay outputs: 5 A - 250 V