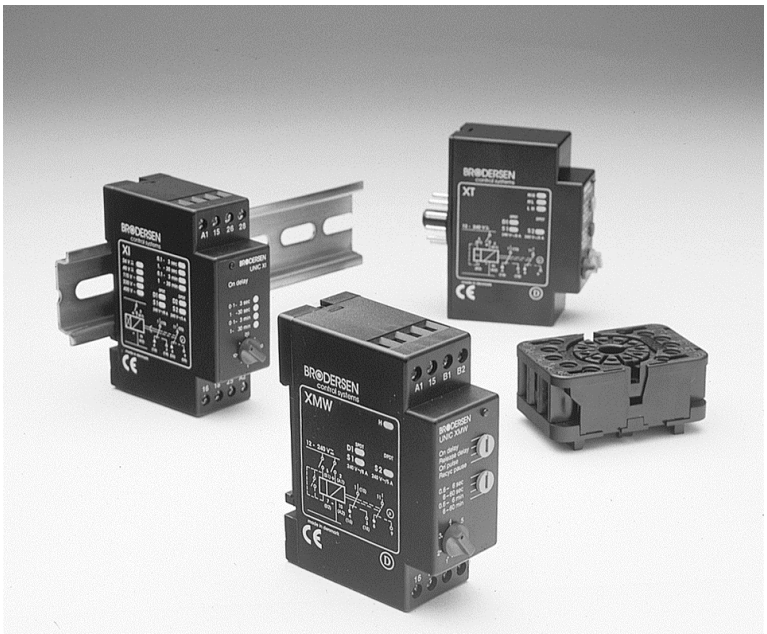
Electronic Timers

Data Sheets and Selection Guide

Valid as of 1 March 2012



BRODERSEN

simplifying systems

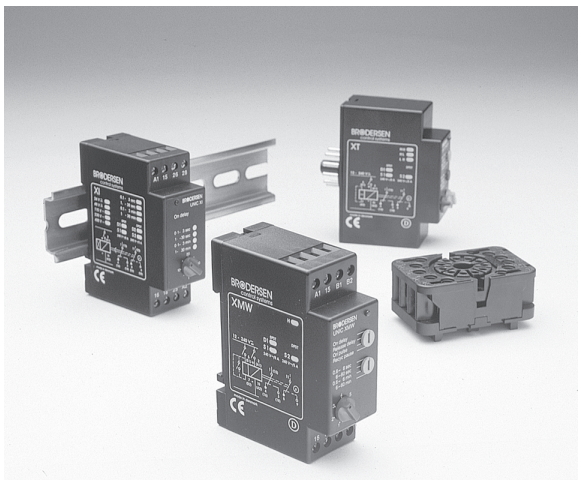
INTRODUCTION

The Brodersen timer programme includes both multifunction and single-function timers. The selection guide below will help to select the right application.

Brodersen multifunction timers combine a range of timing functions which are easily selected on the front of the timer. The time range is also selectable on the front and the timer will work at any voltage from 10.5-265V AC or DC

In addition to the multifunction timers, Brodersen also manufacture a singlefunction timer. All timers are available in versions for DIN rail or 11-pole plug-in mounting.

The compact design, the ease of adjustment and the consistent quality of the entire range of Brodersen timers are the hallmarks of a truly unique product.

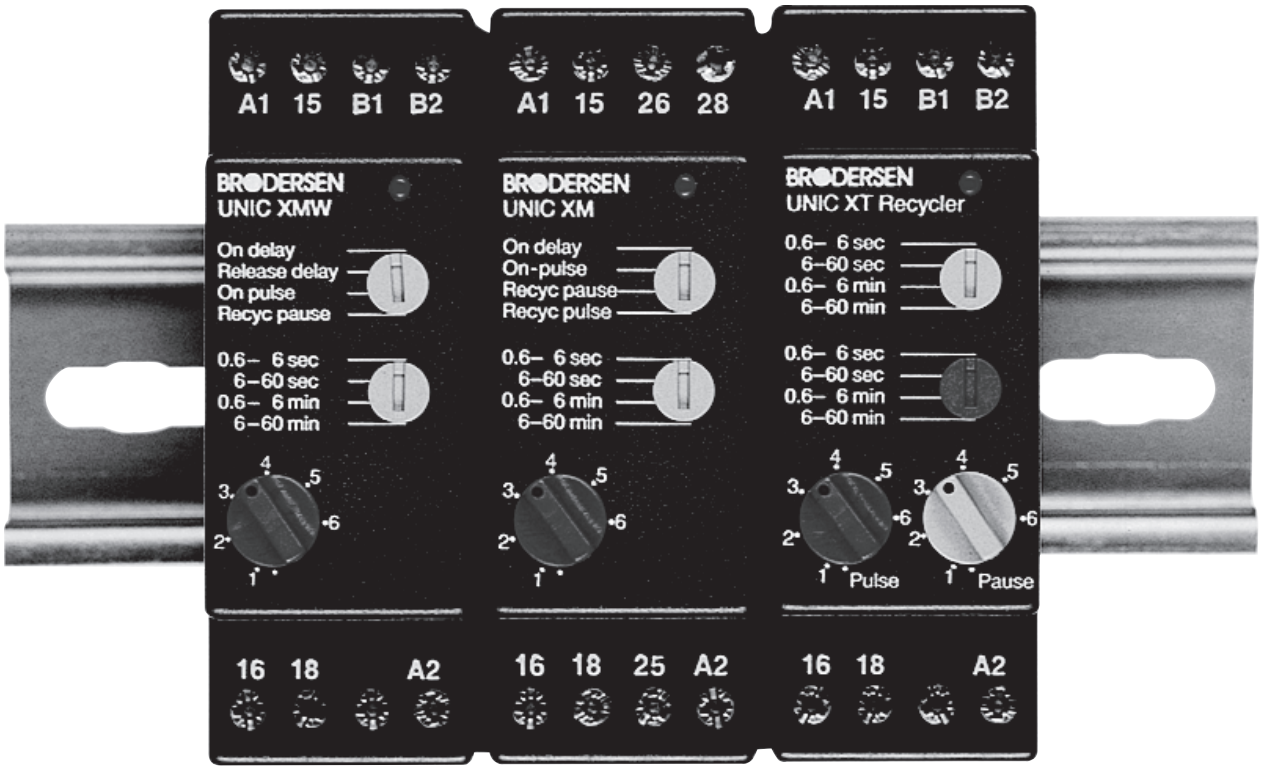


SELECTION GUIDE

	Output			Time range and adjustment							Housing			
Function	Output relay, SPDT	Output relay, DPDT	Transistor output	0.1sec-3min.	0.1sec-10min.	0.1sec.-30min.	1.5-60sec.	0.6sec.-60min.	0.6min.-60hrs.	Potentiometer, front	Remote timer start	W: 27 mm x H: 75 mm	**Multi-/singlefunction**	**Type**	**Page**
On delay	•	•						•	•	•		•	Multifunction	XMW	8
	•	•						•		•		•	M	XM	4
Release delay	•	•						•	•	•	•	•	M	XMW	8
	•	•						•		•	•	•	M	XW	6
Release delay - true off	•	•		•						•	•	•	S	XF	14
On pulse	•	•						•	•	•	•	•	M	XMW	8
	•	•						•		•		•	M	XM	4
	•	•						•		•	•	•	M	XW	6
Off pulse	•	•						•		•	•	•	M	XW	6
On-off pulse	•	•						•		•	•	•	M	XW	6
Symmetrical recycler	•	•						•	•	•		•	M	XMW	8
	•	•						•		•		•	M	XM	4
Asymmetrical recycler	•	•						•	•	•		•	M	XT	10
One shot, asymmetrical	•	•						•		•		•	M	XOT	12

PROVEN TECHNOLOGY

You will find Brodersen timers in equipment, control panels and machines all over the world. Over the last decade more than 1 million timers has been installed in various applications. And we are still one of the largest manufactures of electronic timers. That is what we call “Proven Techology”.



DESCRIPTION

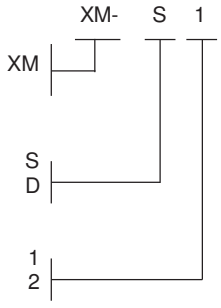
Multifunction timer with 4 functions and 4 time ranges. The function and the time range are selectable via 2 front mounted rotary switches. Time ranges: 0.6-6sec, 6-60sec, 0.6-6min, 6-60min. The time is adjustable on the timer front.
The timer can directly be connected to the supply voltage in the range of 10.5-265V AC/DC.
Single or double relay output with LED indication of energized relay. Intermittent flashing of LED indicating timing period (over 6 sec.).
Versions available for DIN rail or 11-pole plug-in mounting.

VERSIONS/ORDERING CODES

Type:
On delay.
On pulse.
Symmetrical recycler.

Mounting:
11-pole plug-in.
DIN rail.

Output relay:
SPDT.
DPDT.

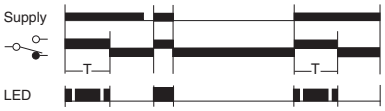


OPERATION

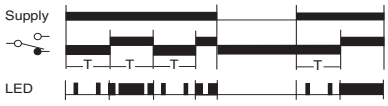
The function is selected via the rotary switch on the timer front. The switch may only be operated, when the supply voltage is disconnected.

On delay.
The timing period starts when supply voltage is connected. When the preset time has elapsed, the relay is energized.
The relay is de-energized when the supply voltage is disconnected.
If the supply voltage is disconnected before the preset time has elapsed, the timer resets.

On pulse.
When supply voltage is connected, the relay is energized and the timing period starts. When the preset time has elapsed, the relay is de-energized.
If the supply voltage is disconnected before the preset time has elapsed, the relay will be de-energized and the timer resets.



Symmetrical recycler with pause or pulse start.
Depending on the setting of the function switch, the timer starts with e.g a pause period, when supply voltage is connected. When the pause period has elapsed, the relay energizes. The relay remains energized during the pulse period. The sequence is repeated until the supply voltage is disconnected.
The duration of the pause and pulse periods is equal.



TECHNICAL DATA

Time ranges: 0.6-6sec, 6-60sec, 0.6-6min. 6-60min.
Full linearity between the ranges is provided i.e. an adjustment made to a specific time in seconds will give the same time in minutes just by operating the range switch.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Reset time: Max. 100msec.

Output relay: SPDT or DPDT. [1)]
Load (cosφ=1): D1/S1: Max. 8A/240V AC [2)]
Min. 10mA/24VDC
D2/S2: Max. 5A/240V AC [2)]
Min. 100mA/24VDC
Contact material: D1/S1: AgNi 0,15
D2/S2: AgCdO
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate time: Max. 50msec.
Release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1/D2: Directly on DIN rail TS35 (EN50022).

Terminals: Max. conductor size 4 mm^2.
(D1/D2 only)
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24-265V AC
10.5-265V DC

Mains frequency: 40-440Hz.

Consumption: 0.5-3VA.

Cable lengths:
Supply voltage: Max. 50 m.

Protection:
S1/S2: IP40.
D1/D2: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55°C.

Housing: Black Noryl SE-1.

Weight: Typically 80 g.

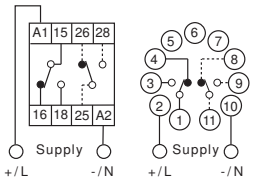
NOTES/REMARKS

1) Double output relay available in S2/D2 versions.
2) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see accessories in price list, to protect the relay contacts.

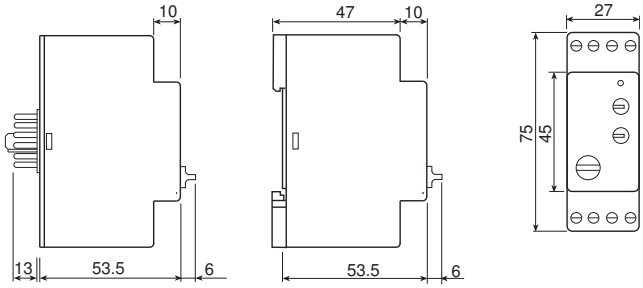
WIRING DIAGRAMS

Supply voltage above 50V.
The installation (all terminals) must be carried out according to the safety regulations! The control input and the supply input must be connected to the same circuit (phase and main switch). The output relay may only be used in circuits made according to the safety regulations.

Supply voltage below 50V.
The output relay may NOT be used for voltages above 50V unless the entire supply circuit is made according to the safety regulations.



MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS, X TIMERS.

Fig. 1

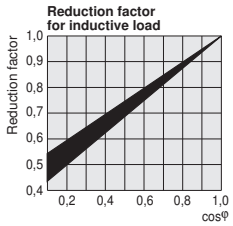
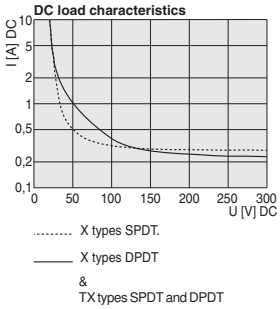


Fig. 2



DESCRIPTION

Multifunction timer with 5 functions and 4 time ranges. The function and the time range are selectable via 2 front mounted rotary switches.
Time ranges: 0.6-6sec, 6-60sec, 0.6-6min, 6-60min. The time is adjustable on the timer front.
The timer can directly be connected to the supply voltage in the range of 10.5-265V AC/DC.
Single or double relay output with LED indication of energized relay.
Intermittent flashing of LED indicating timing period (over 6 sec.).
Versions available for DIN rail or 11-pole plug-in mounting.

VERSIONS/ORDERING CODES

Type:
Release delay.
On pulse - without control switch.
On pulse - with control switch. XW
Off pulse.
On-off pulse.

Mounting:
11-pole plug in. S
DIN rail. D

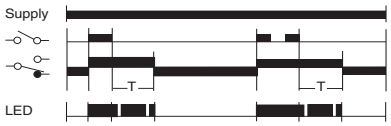
Output relay:
SPDT. 1
DPDT [1]. 2

XW - S 1

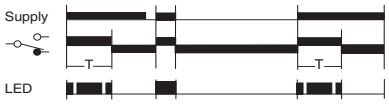
OPERATION

The function is selected via the rotary switch on the timer front. The switch may only be operated, when the supply voltage is disconnected.

Release delay.
The timer must be connected to the supply voltage permanently.
When the switch is closed, the output relay is energized. When the switch is opened again, the timing period starts.
The relay de-energizes when the preset time has elapsed.

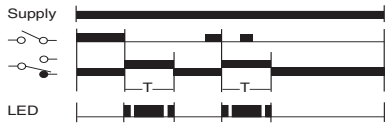


On pulse - without control switch.
A jumper must be connected between 5 and 7 (B1 and B2).
When supply voltage is connected, the relay is energized and the timing period starts. The relay de-energizes when the preset time has elapsed.

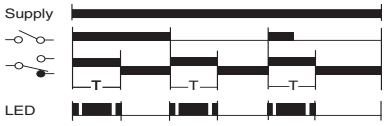


On pulse - with control switch.
The timer must be connected to the supply voltage permanently.
When the control switch is closed, the output relay is energized and the timing period starts. When the preset time has elapsed, the relay de-energizes.
To energize the relay again, the control switch must be opened and closed again, after the relay is de-energized.

Off pulse.
The timer must be connected to the supply voltage permanently.
When the control switch is opened after having been closed, the relay is energized and the timing period starts. When the preset time has elapsed, the relay de-energizes.



On-off pulse.
The timer must be connected to supply voltage permanently.
When the control switch is opened or closed, the relay is energized and the timing period starts. When the preset time has elapsed, the relay de-energizes.
During the timing period the control switch cannot change the status of the relay.



TECHNICAL DATA

Time ranges: 0.6-6sec, 6-60sec, 0.6-6min. 6-60min.
Full linearity between the ranges is provided i.e. an adjustment made to a specific time in seconds will give the same time in minutes just by operating the range switch.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Start pulse: Min. 30msec.

Reset time: Max. 100msec.

Input current (control switch): 3-5mA (max. 0.2A peak).

Output relay: SPDT or DPDT. [1]
Load (cosφ=1): D1/S1: Max. 8A/240V AC [4]
Min. 10mA/24VDC
S2: Max. 5A/240V AC [4]
Min. 100mA/24VDC
Contact material: D1/S1: AgNi 0,15
S2: AgCdO
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate and release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1: Directly on DIN rail TS35 (EN50022).

Terminals: (D1 only) Max. conductor size 4 mm^2.
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24-265V AC
10.5-265V DC

Mains frequency: 40-440Hz.

Consumption: 0.5-3VA.

Cable lengths:
Supply voltage: Max. 50 m.
Control switch: Max. 50 m.

Protection:
S1/S2: IP40.
D1: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55 °C.

Housing: Black Noryl SE-1.

Weight: Typically 80 g.

NOTES/REMARKS

1) Double output relay only available in S2 versions.
2) Terminals 2 and 7 (A1 & B2) are internally connected.
3) Terminals 5 and 7 (B1 & B2) are not galvanically isolated from the supply terminals 2 and 10 (A1 & A2), the control switch must therefore be approved for the actual supply voltage.
4) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see tmer price list, to protect the relay contacts.

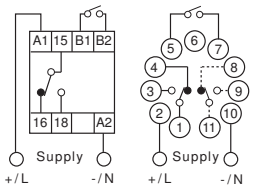
WIRING DIAGRAMS

Supply voltage above 50V.
The installation (all terminals) must be carried out according to the safety regulations! The control input and the supply input must be connected to the same circuit (phase and main switch). The output relay may only be used in circuits made according to the safety regulations.

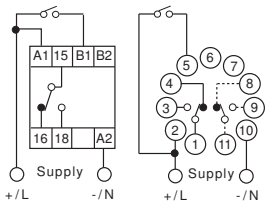
Supply voltage below 50V.
The output relay may NOT be used for voltages above 50V unless the entire supply circuit is made according to the safety regulations.

Release delay. On pulse - with control switch. Off pulse. On-Off pulse.

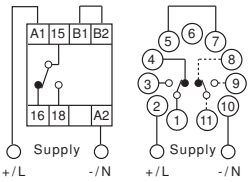
Alternative 1



Alternative 2

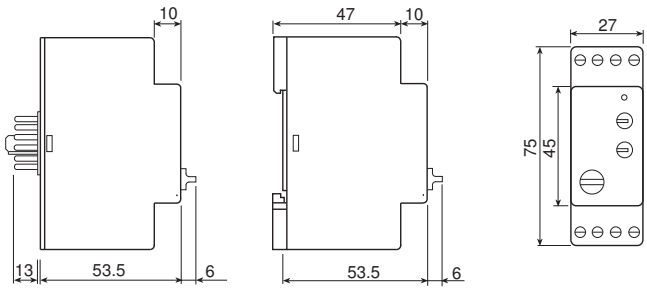


note 1-3



note 1-3

MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS

Fig. 1

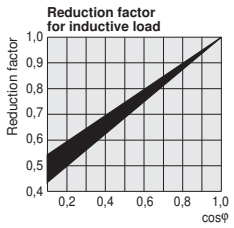
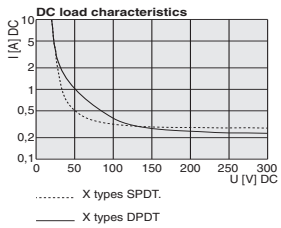


Fig. 2



DESCRIPTION

Multifunction timer with 5 functions and 4 time ranges. The function and the time range are selectable via 2 front mounted rotary switches.
The time ranges cover 0.6sec.-60min. or 0.6min.-60hrs. The time is adjustable on the timer front.
The timer can directly be connected to the supply voltage in the range of 10.5-265V AC/DC.
Single or double relay output with LED indication of energized relay.
Intermittent flashing of LED indicating timing period (over 6 sec.).
Versions available for DIN rail or 11-pole plug-in mounting.

VERSIONS/ORDERING CODES

XMW- S 1 H

Type:
On delay.
Release delay.
On pulse - without control switch. XMW
On pulse - with control switch.
Symmetrical recycler with pause start.

Mounting:
11-pole plug-in. S
DIN rail. D

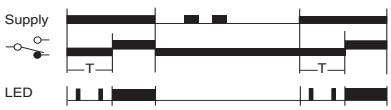
Output relay:
SPDT. 1
DPDT [1]. 2

Timing range:
0.6sec.-60min.
0.6min.-60hrs. H

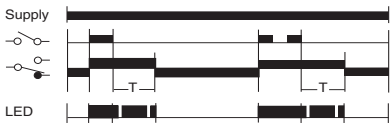
OPERATION

The function is selected via the rotary switch on the timer front. The switch may only be operated, when the supply voltage is disconnected.

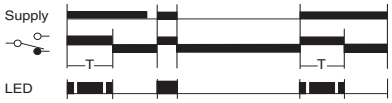
On delay.
The timing period starts when supply voltage is connected. When the preset time has elapsed, the relay is energized.
The relay is de-energized when the supply voltage is disconnected.



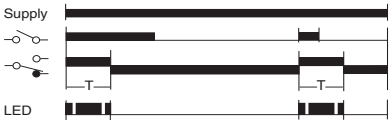
Release delay.
The timer must be connected to supply voltage permanently.
When the switch is closed, the output relay is energized. When the switch is opened again, the timing period starts.
The relay de-energizes when the preset time has elapsed.



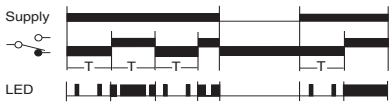
On pulse - without control switch.
A jumper must be connected between 5 and 7 (B1 and B2).
When supply voltage is connected, the relay is energized and the timing period starts. The relay de-energizes when the preset time has elapsed.



On pulse - with control switch.
The timer must be connected to supply voltage permanently.
When the control switch is closed, the output relay is energized and the timing period starts. When the preset time has elapsed, the relay de-energizes.
To energize the relay again, the control switch must be opened and closed again, after the relay is de-energized.



Symmetrical recycler with pause start.
When supply voltage is connected and the pause period has elapsed, the relay energizes. The relay remains energized during the pulse period. The sequence is repeated until the supply voltage is disconnected.
The duration of the pause and pulse periods is equal.



TECHNICAL DATA

Time ranges:

Code	Time ranges			
	0.6-6sec.	6-60sec.	0.6-6min.	6-60min.
H	0.6-6min.	6-60min.	0.6-6hrs.	6-60hrs.

Full linearity between the ranges is provided i.e. an adjustment made to a specific time in seconds will give the same time in minutes just by operating the range switch.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Start pulse: Min. 30msec.

Reset time: Max. 100msec.

Input current (control switch): 3-5mA (max. 0.2A peak).

Output relay: SPDT or DPDT. [1)]
Load (cosφ=1): D1/S1: Max. 8A/240V AC [5)]
Min. 10mA/24VDC
S2: Max. 5A/240V AC [5)]
Min. 100mA/24VDC
Contact material: D1/S1: AgNi 0,15
S2: AgCdO
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate time: Max. 50msec.
Release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1: Directly on DIN rail TS35 (EN50022).

Terminals: (D1 only) Max. conductor size 4 mm^2.
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24-265V AC
10.5-265V DC

Mains frequency: 40-440Hz.

Consumption: 0.5-3VA.

Cable lengths:
Supply voltage: Max. 50 m.
Control switch: Max. 50 m.

Protection:
S1/S2: IP40.
D1: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55°C.

Housing: Black Noryl SE-1.

Weight: Typically 80 g.

NOTES/REMARKS

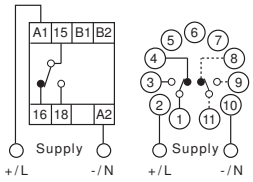
1) Double output relay only available in S2 versions.
2) Terminals 2 and 7 (A1 & B2) are internally connected.
3) Terminals 5 and 7 (B1 & B2) are not galvanically isolated from the supply terminals 2 and 10 (A1 & A2), the control switch must therefore be approved for the actual supply voltage.
4) Terminals 5 and 6 are internally connected.
5) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see timer price list , to protect the relay contacts.

WIRING DIAGRAMS

Supply voltage above 50V.
The installation (all terminals) must be carried out according to the safety regulations! The control input and the supply input must be connected to the same circuit (phase and main switch). The output relay may only be used in circuits made according to the safety regulations.

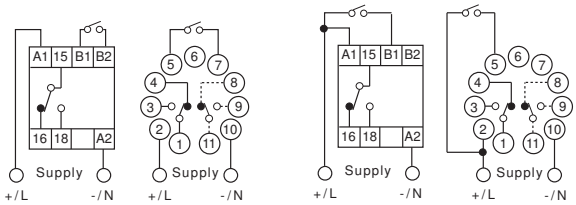
Supply voltage below 50V.
The output relay may NOT be used for voltages above 50V unless the entire supply circuit is made according to the safety regulations.

On delay. Symmetrical recycler.



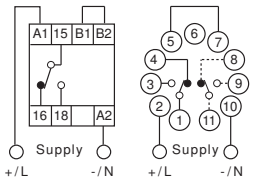
note 1-4

Release delay. On pulse - with control switch.
Alternative 1 Alternative 2



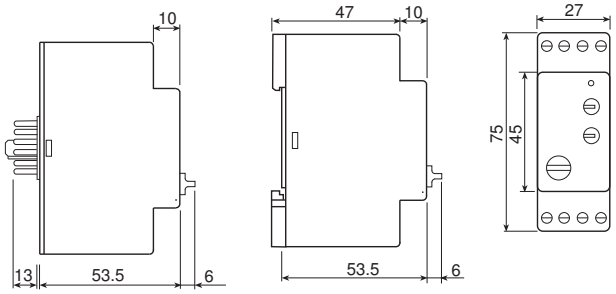
note 1-4 note 1-4

On pulse - without control switch.



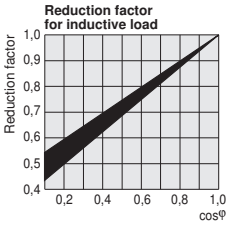
note 1-4

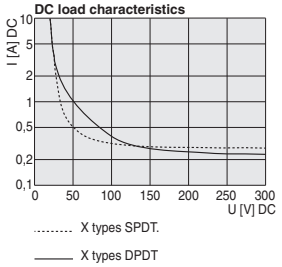
MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS

Fig. 1 Fig. 2



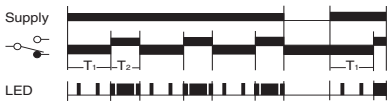


DESCRIPTION

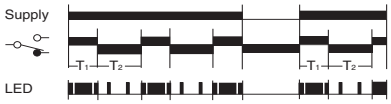
Asymmetrical recycler with 2 functions and 4 time ranges. The function is selected by mounting a jumper and the time range is selectable via the front mounted rotary switch.
The pulse and pause time ranges cover 0.6sec.-60min. or 0.6min.-60hrs. Pulse and pause time are individually adjustable on the timer front.The timer can directly be connected to the supply voltage in the range of 10.5-265V AC/DC.
Single or double relay output with LED indication of energized relay.
Intermittent flashing of LED indicating timing period (over 6 sec.).
Versions available for DIN rail or 11-pole plug-in mounting.

OPERATION

Asymmetrical recycler with pause start.
When supply voltage is connected and the pause time has elapsed, the output relay is energized. The relay remains energized through the pulse period. The sequence is repeated until the supply voltage is disconnected.
When the supply voltage is disconnected, the timer resets.



Asymmetrical recycler with pulse start.
By connecting terminals 5 and 7 (B1 and B2) the recycler starts with a pulse i.e. the relay is energized when supply voltage is applied.



Please note that the function: Pause start/pulse start is determined at power up. If the terminals 5 and 7 (B1 and B2) are connected or disconnected after power up, it will not change function.

VERSIONS/ORDERING CODES

XT - S 1 . LH

Type:
Asymmetrical recycler. XT

Mounting:
11 pole plug-in. S
DIN rail. D

Output relay:
SPDT. 1
DPDT [1]. 2

Timing range (pause/pulse):
0.6sec-60min./0.6sec-60min.
0.6sec-60min./0.6min-60hours. LH
0.6min-60hours. /0.6sec-60min. HL
0.6min-60hours. /0.6min-60hours. HH

TECHNICAL DATA

Time ranges:

Code	Time ranges
	0.6-6sec.6-60sec.0.6-6min. 6-60min.
H	0.6-6min. 6-60min.0.6-6hrs. 6-60hrs.

Full linearity between the ranges is provided i.e. an adjustment made to a specific time in seconds will give the same time in minutes just by operating the range switch.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Reset time: Max. 100msec.

Output relay: SPDT or DPDT. [1)]
Load (cosφ=1): D1/S1: Max. 8A/240V AC [3)]
Min. 10mA/24VDC
S2 : Max. 5A/240V AC [3)]
Min. 100mA/24VDC
Contact material: D1/S1: AgNi 0,15
S2: AgCdO
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate time: Max. 50msec.
Release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1: Directly on DIN rail TS35 (EN50022).

Terminals: (D1 only) Max. conductor size 4 mm^2.
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24-265V AC
10.5-265V DC

Mains frequency: 40-440Hz.

Consumption: 0.5-3VA.

Cable lengths:
Supply voltage: Max. 50 m.

Protection:
S1/S2: IP40.
D1: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55°C.

Housing: Black Noryl SE-1.

Weight: Typically 80 g.

NOTES/REMARKS

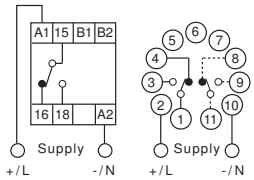
1) Double output relay only available in S2 versions.
2) Terminals 2 & 7 (A1 & B2) are internally connected.
3) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see timer price list, to protect the relay contacts.

WIRING DIAGRAMS

Supply voltage above 50V.
The installation (all terminals) must be carried out according to the safety regulations! The control input and the supply input must be connected to the same circuit (phase and main switch). The output relay may only be used in circuits made according to the safety regulations.

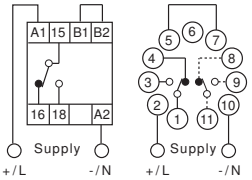
Supply voltage below 50V.
The output relay may NOT be used for voltages above 50V unless the entire supply circuit is made according to the safety regulations.

Pause start



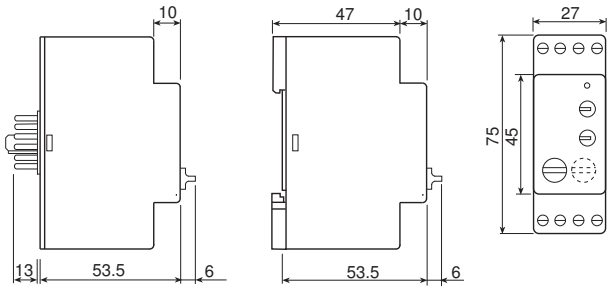
note 1, 2

Pulse start



note 1, 2

MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS

Fig. 1

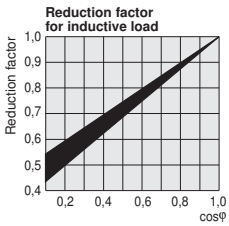
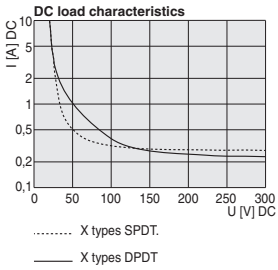


Fig. 2

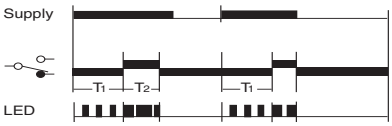


DESCRIPTION

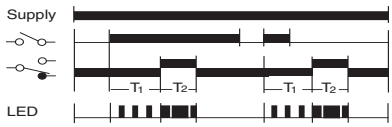
One shot asymmetrical timer with 4 time ranges.
The time range is selectable via the front mounted rotary switch.
The pulse and pause time ranges cover 0.6sec.-60min. or 0.6min.-60hrs. Pulse and pause time are individually adjustable on the timer front.The timer can directly be connected to the supply voltage in the range of 10.5-265V AC/DC.
Single or double relay output with LED indication of energized relay.
Intermittent flashing of LED indicating timing period (over 6 sec.).
Versions available for DIN rail or 11-pole plug-in mounting.

OPERATION

One-shot asymmetrical without control switch.
A jumper must be connected between 5 and 7 (B1 and B2).
When supply voltage is connected and the pause time has elapsed, the output relay is energized. The relay remains energized through the pulse period and de-energize when the puls period has elapsed.
This is one time sequenze (one shot).



One-shot asymmetrical with control switch.
The timer must be connected to supply permanently.
When the switch is closed, the pause timing period starts. When the preset pause time has elapsed, the output relay is energized. The relay remains energized through the pulse period and de-energize when the puls period has elapsed.
To start a one-shot sequenze again, the control switch must be opened and closed again, after the relay is de-energized.



VERSIONS/ORDERING CODES

XOT- S 1 . LH

Type:
One shot asymmetrical. XOT

Mounting:
11 pole plug-in. S
DIN rail. D

Output relay:
SPDT. 1
DPDT [1]. 2

Timing range (pause/pulse):
0.6sec-60min./0.6sec-60min.
0.6sec-60min./0.6min-60hours. LH
0.6min-60hours. /0.6sec-60min. HL
0.6min-60hours. /0.6min-60hours.HH

TECHNICAL DATA

Time ranges:

Code	Time ranges
	0.6-6sec.6-60sec.0.6-6min. 6-60min.
H	0.6-6min. 6-60min.0.6-6hrs. 6-60hrs.

Full linearity between the ranges is provided i.e. an adjustment made to a specific time in seconds will give the same time in minutes just by operating the range switch.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Reset time: Max. 100msec.

Output relay: SPDT or DPDT. [1)]
Load (cosφ=1): D1/S1: Max. 8A/240V AC [5)]
Min. 10mA/24VDC
S2 : Max. 5A/240V AC [5)]
Min. 100mA/24VDC
Contact material: D1/S1: AgNi 0,15
S2: AgCdO
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate time: Max. 50msec.
Release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1: Directly on DIN rail TS35 (EN50022).

Terminals: (D1 only) Max. conductor size 4 mm^2.
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24-265V AC
10.5-265V DC

Mains frequency: 40-440Hz.

Consumption: 0.5-3VA.

Cable lengths:
Supply voltage: Max. 50 m.

Protection:
S1/S2: IP40.
D1: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55°C.

Housing: Black Noryl SE-1.

Weight: Typically 80 g.

NOTES/REMARKS

1) Double output relay only available in S2 versions.
2) Terminals 2 and 7 (A1 & B2) are internally connected.
3) Terminals 5 and 7 (B1 & B2) are not galvanically isolated from the supply terminals 2 and 10 (A1 & A2), the control switch must therefore be approved for the actual supply voltage.
4) Terminals 5 and 6 are internally connected.
5) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see timer price list, to protect the relay contacts.

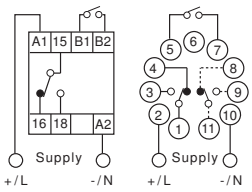
WIRING DIAGRAMS

Supply voltage above 50V.
The installation (all terminals) must be carried out according to the safety regulations! The control input and the supply input must be connected to the same circuit (phase and main switch). The output relay may only be used in circuits made according to the safety regulations.

Supply voltage below 50V.
The output relay may NOT be used for voltages above 50V unless the entire supply circuit is made according to the safety regulations.

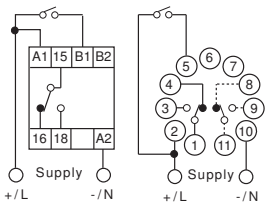
Function - with control switch.

Alternative 1



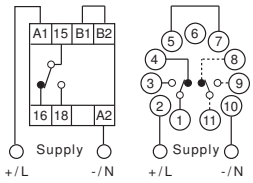
Note 1-4

Alternative 2



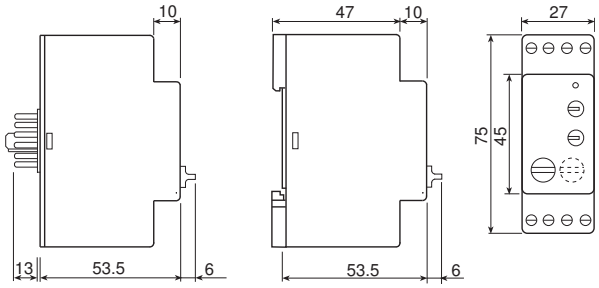
Note 1-4

Function - Without control switch.



Note 1-4

MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS

Fig. 1

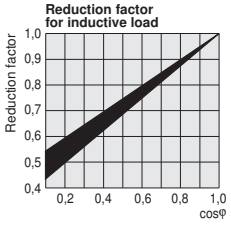
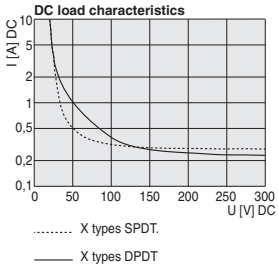


Fig. 2

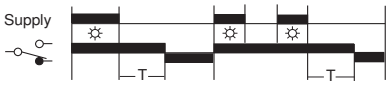


DESCRIPTION

Timer with release delay function, the timer operates without auxiliary supply voltage during the timing period.
Fixed time ranges: 0.1-3sec, 1-30sec. or 0.1-3min. The time is adjustable on the timer front.
The timer is available in different versions for AC and DC supply voltage.
Single or double relay output with LED indication of energized relay.
Versions available for DIN rail or 11-pole plug-in mounting.

OPERATION

Release delay - true off.
When supply voltage is connected, the output relay is energized. When the supply voltage is disconnected, the timing period starts and the output relay remains energized until the preset time has elapsed.



VERSIONS/ORDERING CODES

XF - S 1 230 1

Type:
Release delay - true off. XF

Mounting:
11-pole plug-in. S
DIN rail. D

Output relay:
SPDT. 1
DPDT. 2

Supply voltage:
24V AC/DC 024
48V AC/DC 048
110/120V AC 115
220/240V AC 230
380V AC 380

Timing ranges:
0.1-3sec. 1
1-30sec. 2
0.1-3min. 3

TECHNICAL DATA

Time ranges: 0.1-3sec, 1-30sec, 0.1-3min.

Timer accuracy:
Repeating accuracy: ± 0.5% at constant conditions.
Setting accuracy: ± 10%.
Temperature drift: Max. 0.15% per °C.

Start time: Min. 100msec. [2]

Reset time: Max. 100msec.

Output relay: SPDT or DPDT. [1]
Load (cosφ=1): D1/S1: Max. 8A/24V AC [3]
Min.10mA/240V DC
D2/S2: Max. 5A/240V AC [3]
Min.100mA/24V DC
Contact material: AgNi 0,15.
Frequency: Max. 1000 operations per hour at max. load.
Mechanical life time: Min. 10 x 10^6 operations.
Electrical life time: Min. 100,000 operations at max. load.
Operate and release time: Max. 20msec.

Mounting:
S1/S2: 11-pole plug-in.
D1/D2: Directly on DIN rail TS35 (EN50022).

Terminals: Max. conductor size 4 mm^2.
(D1/D2 only)
Screw type terminals with self-lifting clamps shrouded in accordance to VDE0106 (finger and back of hand protection).

Supply voltage: 24V AC/DC (20-28V),
48V AC/DC (40-56V),
110/120V AC/DC (95-135V),
220/240V AC (195-265V),
380V (340-420V).

Mains frequency: 40-60Hz.

Consumption: 0.7-1VA [2].

Cable lengths:
Supply voltage: Max. 50 m.

Protection:
S1/S2: IP40.
D1/D2: IP20.

EMC: Conforming to EN 50081-1/EN 50082-2.

Isolation:
Supply to relay contacts: 2kV AC according to EN 60950 class I.

Ambient temperature: -20 to +55°C.

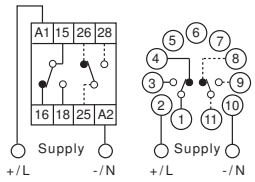
Housing: Black Noryl SE-1.

Weight: Typically 80 g.

NOTES/REMARKS

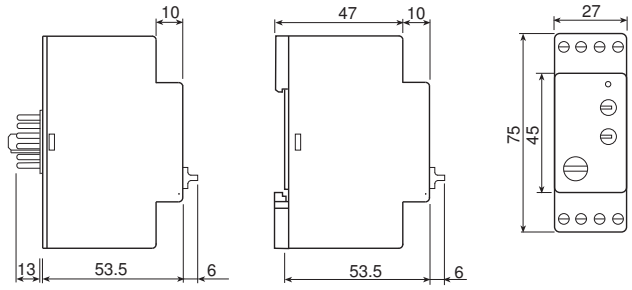
1) Double output relay available in S2/D2 versions.
2) The supply voltage must be applied for minimum 100 msec. or the output relay will remain activated after the preset time has elapsed. The power supply must be able to supply an in-rush current of minimum 300mA during the 100msec. start time.
3) When inductive or DC loads are switched the load capacity of the output relay is reduced, see the output load diagrams on fig. 1 and 2. When inductive loads are switched, it is recommended to use a RC-network, see timer price list, to protect the relay contacts.

WIRING DIAGRAMS



note 1

MECHANICAL DIMENSIONS



OUTPUT LOAD DIAGRAMS

Fig.1

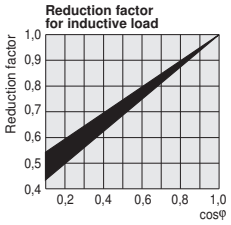


Fig. 2