Single-function time relay

General

■Applications
-Suitable for applications where function and time requirements are know.
-Time switch , possible to be used for pump decay time after switching heating off , switching of fans.

■Function Features
-Single-function relay with possibility of time setting by a potentiometer.
-Choice of 2 functions:
A:Delay ON
B:Delay OFF
-Time scale 0.1 s - 10 days divided into 10 ranges..
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

■Model and connotation

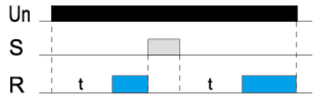
EBST8 –□ □/□
- Rated control supply voltage: A230:AC230V; W240:AC/DC12V-240V
- Number of contacts: 1:1×SPDT; 2:2×SPDT
- Function mode: A - Delay ON; B - Delay OFF
- EBST8 eries

Technical parameters

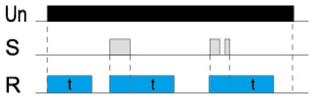
Technical parameters	EBST8-A1/B1	EBST8-A2/B2
Function	delay ON	delay OFF
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.7-3VA/DC 0.5-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.12VA/1.3W	AC max.12VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Time ranges	0.1s-10days,ON,OFF	
Time setting	potentionmeter	
Time deviation	5%-mechanical setting	
Repeat accuracy	0.2%-set value stability	
Temperature coecient	0.05%/℃,at=20℃(0.05%℉，at=68℉)	
Output	1×SPDT	2×SPDT
Current rating	16A/AC1	
Switching voltage	250VAC/24VDC	
Min.breaking capacity DC	500mW	
Output indication	red LED	
Mechanical life	1×10^7	
Electrical life(AC1)	1×10^6	
Reset time	max.200ms	
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)	
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)	
Mounting/DIN rail	Din rail EN/IEC 60715	
Protection degree	IP40 for front panel/IP20 terminals	
Operating position	any	
Overvoltage cathegory	III.	
Pollution degree	2	
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)	
Dimensions	90×18×64mm	
Weight	1×SPDT:W240-60g,A230-59g	
	2×SPDT:W240-81g,A230-79g	
Standards	IEC/EN 61812-1,IEC/EN61010-1	

Functions Diagram

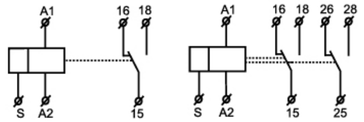
A - Delay ON

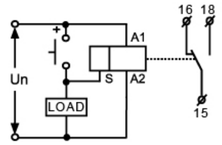


B - Delay OFF



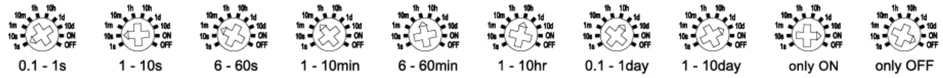
Wiring Diagram



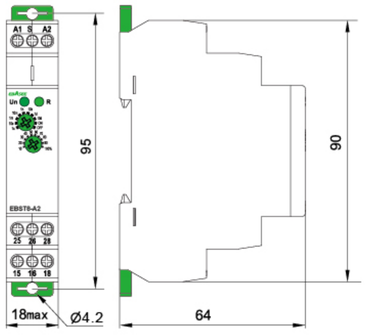


It is possible to connect load between S-A2(e.g contactor , control of light or any other device, without disturbing a correctgunction of relay(load is energized while the switch isON.)

Time Range



Dimensions(mm)



Staircase switch

General

■Applications
-It is used for delayed switching of lights in the corridors, entrances, stairways, halls or for delayed fi nish of fans (WC, bathroom, etc.).

■Function Features
-Operating system switch:
ON - output is constantly ON .
AUTO - timing according to adjusting by potentiometer in range 0.5 - 20 min
OFF - output is constantly OFF.
-Voltage range: AC 230 V, clamp terminals.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

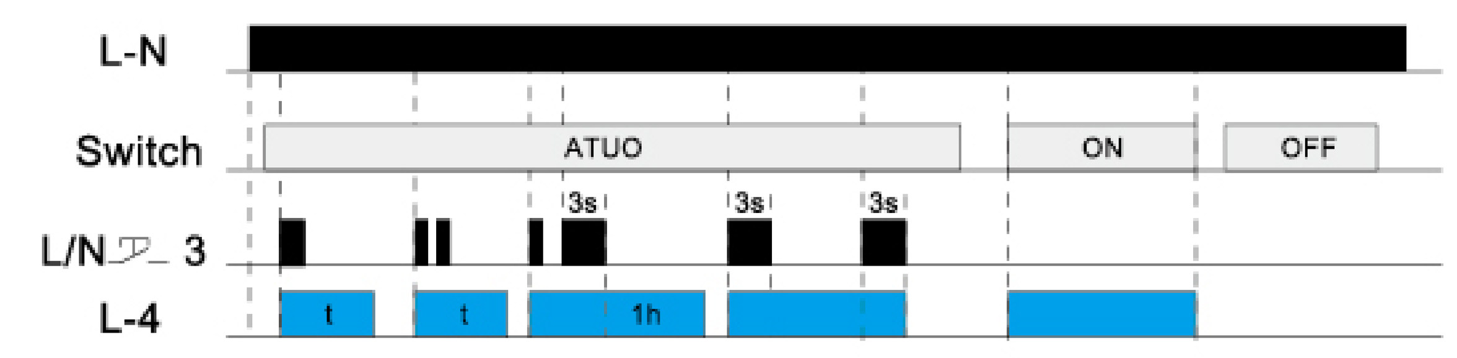
■Model and connotation

EBST8 —LS / □
- □ Rated control supply voltage: A230:AC230V
- LS Stairase Switch
- EBST8 EBST8 Series

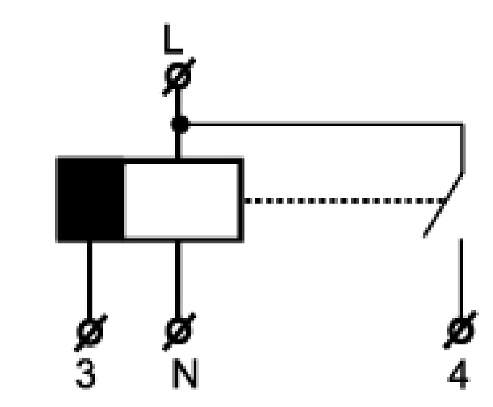
Technical parameters

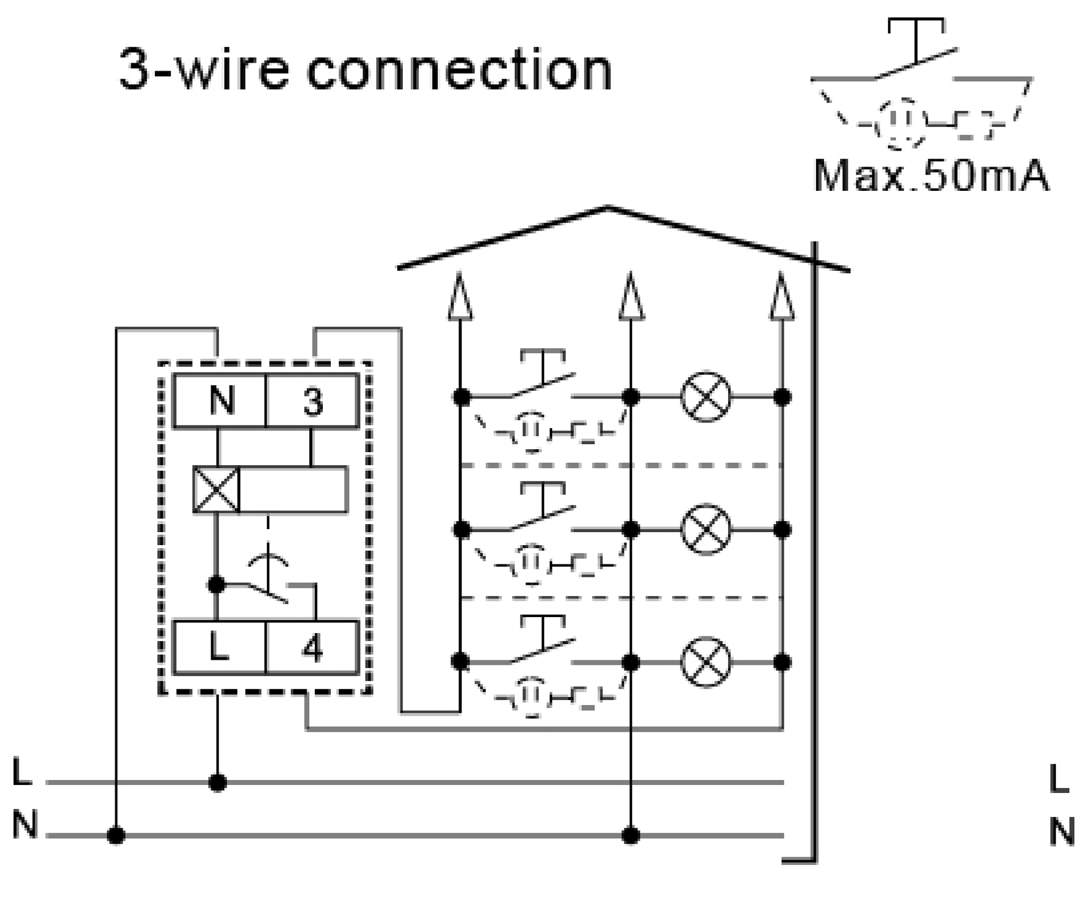
	EBST8-LS
Function	delay off reacting to contact switching
Supply terminals	L-N
Voltage range	AC 230V(50-60Hz)
Power input	AC max.12VA/1.9W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	AUTO:0.5-20min ON OFF
Time setting	potentiometer
Time deviation	5%-mechanical setting
Repeat accuracy	0.2%-set value stability
Mininum power time	200ms
Glow tubes connetions	Yes(N-3 or L-3)
Max.amount of glow lamps	230V,max.75pcs(Measured with glow lamp 0.68mA/230V AC)
Temperature coecient	0.05%/℃,at=20℃(0.05%℉ , at=68℉)
Output	1×SPST
Current rating	16A/AC1
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Output indication	red LED
Mechanical life	1×10^7
Electrical life(AC1)	1×10^6
Reset time	max.200ms
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage cathegory	III.
Pollution degree	2
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)
Dimensions	90×18×64mm
Weight	61g
Standards	IEC/EN 60669-2-3,IEC/EN61010-1

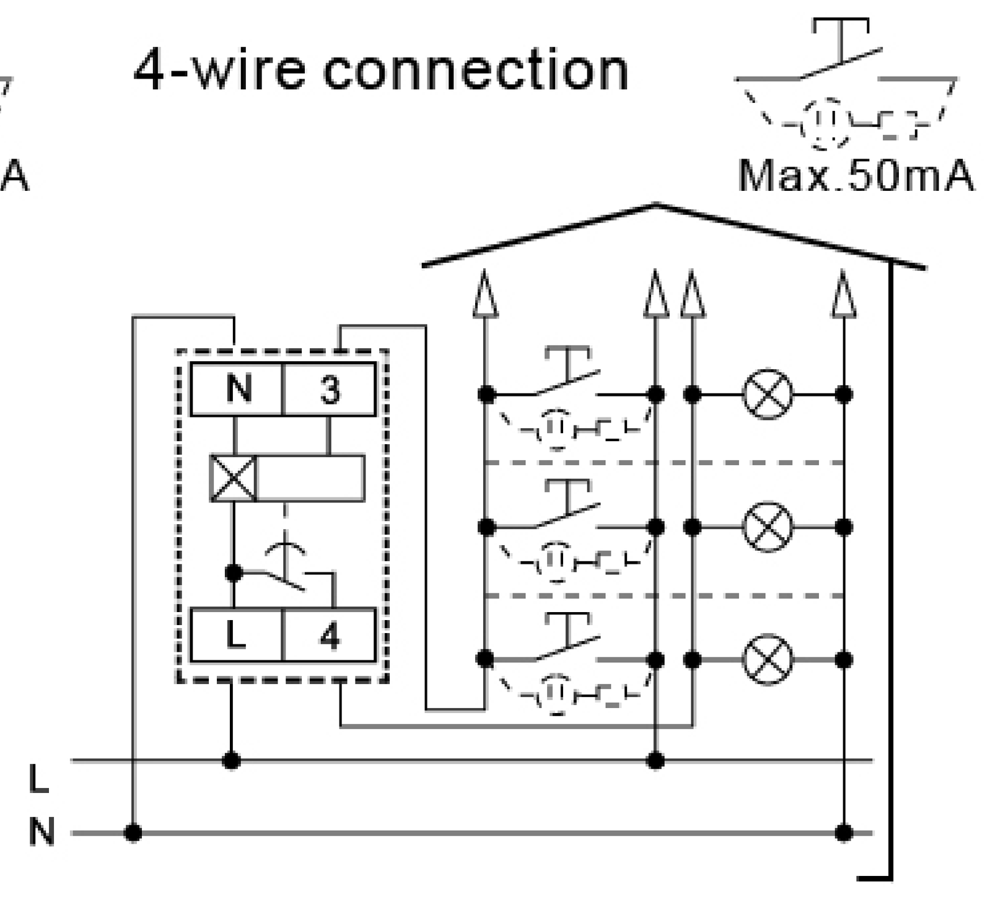
Functions Diagram



Wiring Diagram



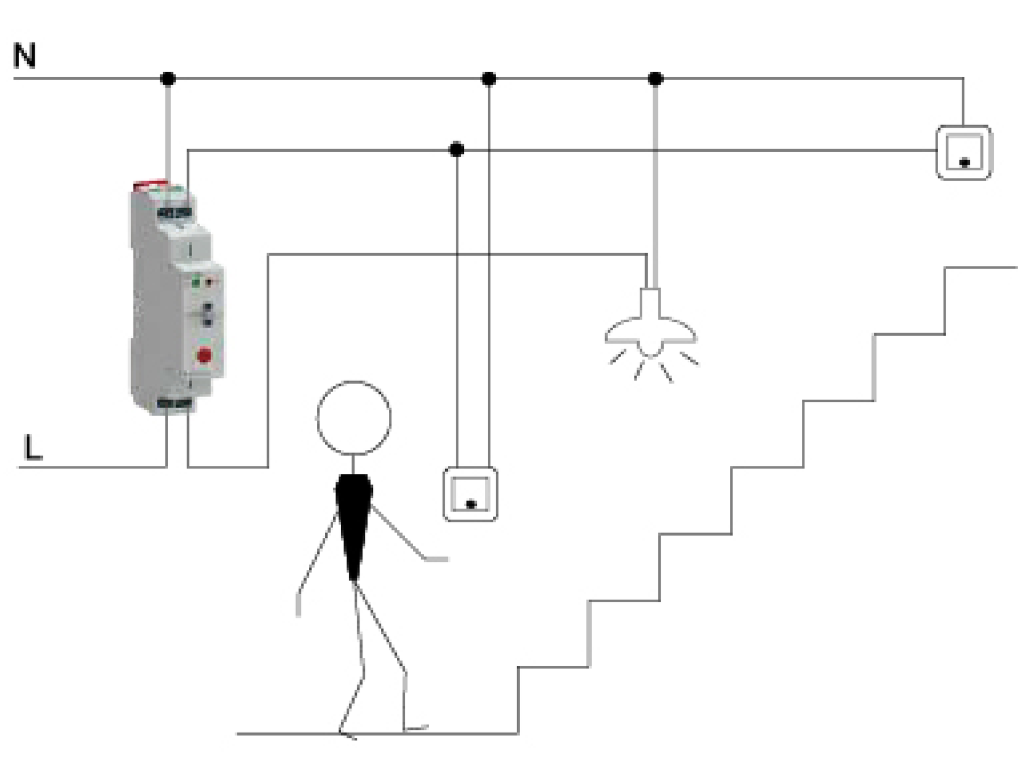




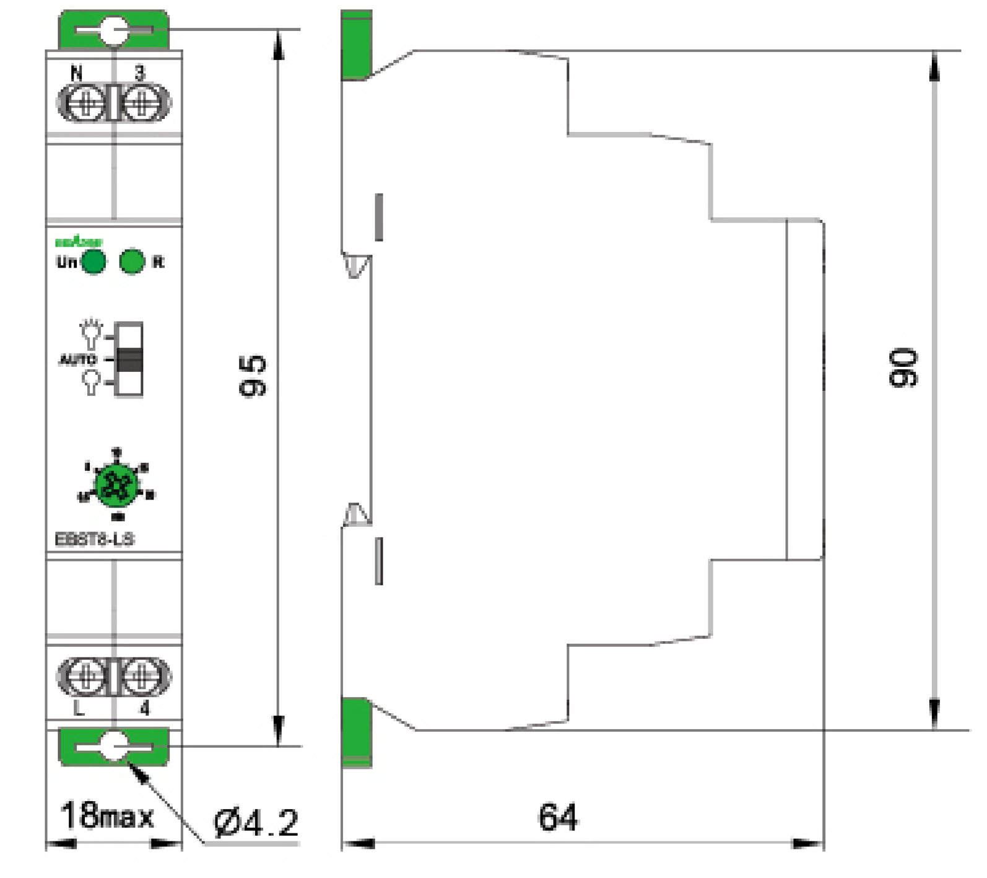
Types of lamps

2000W	2000W	1000W	900W(125uF)	400W

Example



Dimensions(mm)



Monitoring voltage relay

General

■Applications
-Protect electrical equipment and motors from over-voltage and under-voltage.
-Normal/emergency power supply switching.

■ Function Features
-Controls its own supply voltage(True RMS measurement)
-.User may select operation mode through knob.
- Voltage measurement accuracy<1%.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

■Model and connotation

EBSV8 — □/□

- Rated control supply voltage:

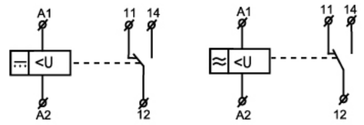
Rated supply voltage code	Rated supply voltage	Supply voltage limits	Range of adjustment
D12	DC 12V	DC 7...20V	DC 9...15V
AD48	AC/DC 24...48V	AC/DC 15...100V	AC/DC 20...80V
AD240	AC/DC 110...240V	AC/DC 50...270V	AC/DC 65...260V
A220	AC 220V	AC 160...270V	AC 180...260V

- Function mode:
  01 - Over/under voltage in windows mode
  02 - Overvoltage Undervoltage
- EBSV8 Series

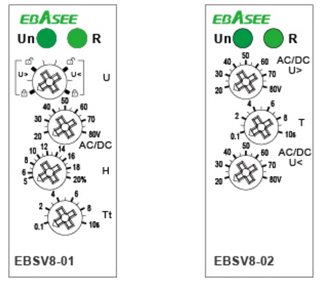
Technical parameters

	EBSV8-01	EBSV8-02
Function	Monitoring voltage	
Supply terminals	A1-A2	
Rated supply voltage	DC12V,AC/DC24V-48V,AC/DC110V-240V,AC220V	
Rated supply frequency	45Hz-65Hz,0	
Hysteresis	5%-20%	3%fixed
Supply indication	green LED	
Time delay	Adjustable 0.1s-10s,10%	
Measurement error	⩽1%	
Run up delay at power up	0.5s time delay	
Konb setting accuracy	1% of scale value	
Reset time	1000ms	
Temperature coecient	0.05%/℃,at=20℃(0.05%℉，at=68℉)	
Output	1×SPDT	
Current rating	10A/AC1	
Switching voltage	250VAC/24VDC	
Min.breaking capacity DC	500mW	
Output indication	red LED	
Mechanical life	1×10^7	
Electrical life(AC1)	1×10^6	
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)	
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)	
Mounting/DIN rail	Din rail EN/IEC 60715	
Protection degree	IP40 for front panel/IP20 terminals	
Operating position	any	
Overvoltage cathegory	III.	
Pollution degree	2	
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)	
Dimensions	90×18×64mm	
Weight	59g	
Standards	IEC/EN 60255-1,IEC/EN61010-1	

Wiring Diagram

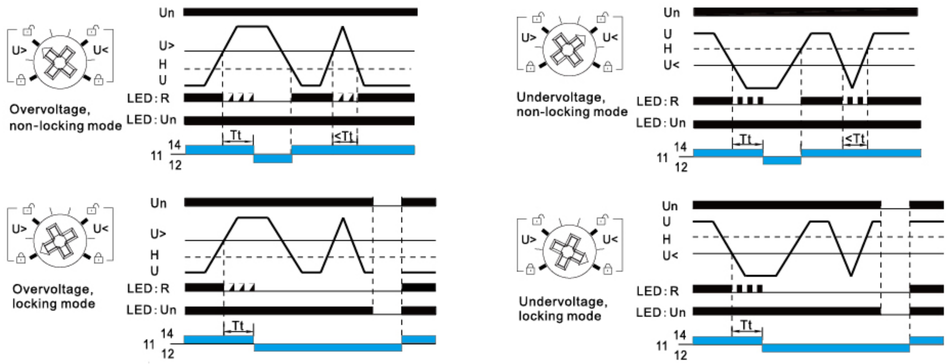


Panel Diagram

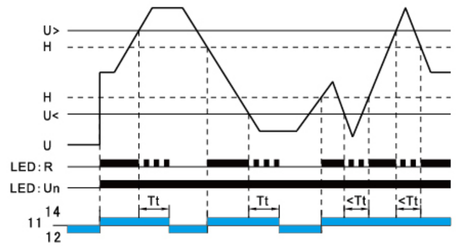


Functions Diagram

EBSV8-01

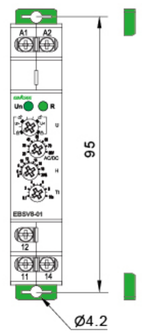


EBSV8-02



U> :Overvoltage threshold
U< :Undervoltage threshold
H :Hysteresis
U :Controlled signal
Tt :Delay on threshold crossing

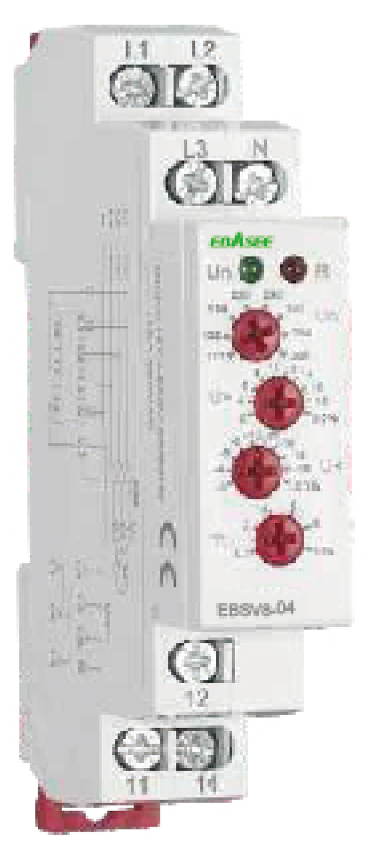
Dimensions(mm)



Control Relay

EBASEE

3-Phase voltage relay



General

■Applications
- -Control for connection of moving equipment(site equipment,agricultural equipent,refrigerated trucks).
- -Control for protection of persons and equipment against the consequences of reverse running.
- -Normal/emergency power supply switching.
- -Protection against the risk of a driving load(phase failure).

■Function Features
- -Controls its own supply voltage(True RMS measurement).
- -Set 8-level rated operating voltage through knob.
- - Measuring frequency range:45Hz-65Hz.
- - Voltage measurement accuracy<1%.
- - Relay status is indicated by LED.
- - 1-MODULE,DIN rail mounting.

■Model and connotation

EBSV8 —□/□
- Rated control supply voltage:
  - M460: 220-230-240-380-400-415-440-460VAC(P-P)
  - M265: 127-132-138-220-230-240-254-265VAC(P-N)
- Funcion mode: Table1
- EBSV8 Series

Table1

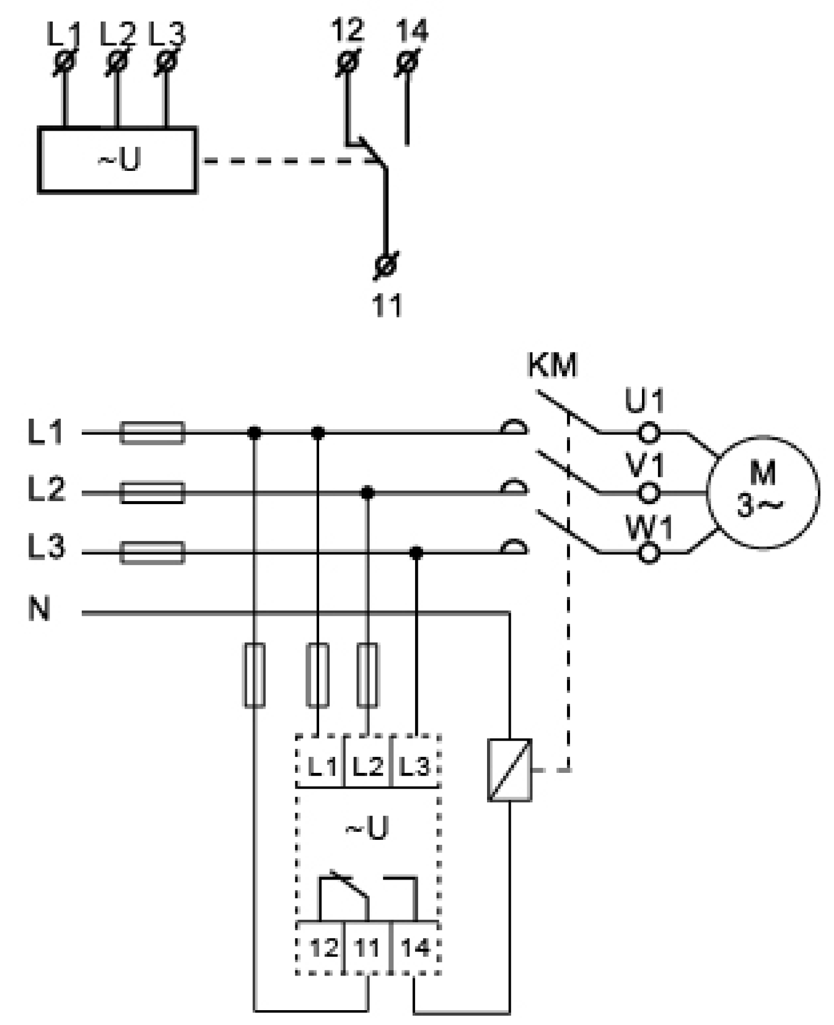
Function code	Over-voltage	Under-voltage	Asymmetry	Delay time	Phase sequence	Phase failure
03					●	●
04	2%...20%	-20%...2%		0.1s...10s	●	●
05	2%...20%	-20%...2%	8%	0.1s...10s	●	●
06	2%...20%	-20%...2%	5%...15%	2s	●	●
07			8%	2s	●	●
08	15%	-15%	8%	2s	●	●

Note:●the function is available

Technical parameters

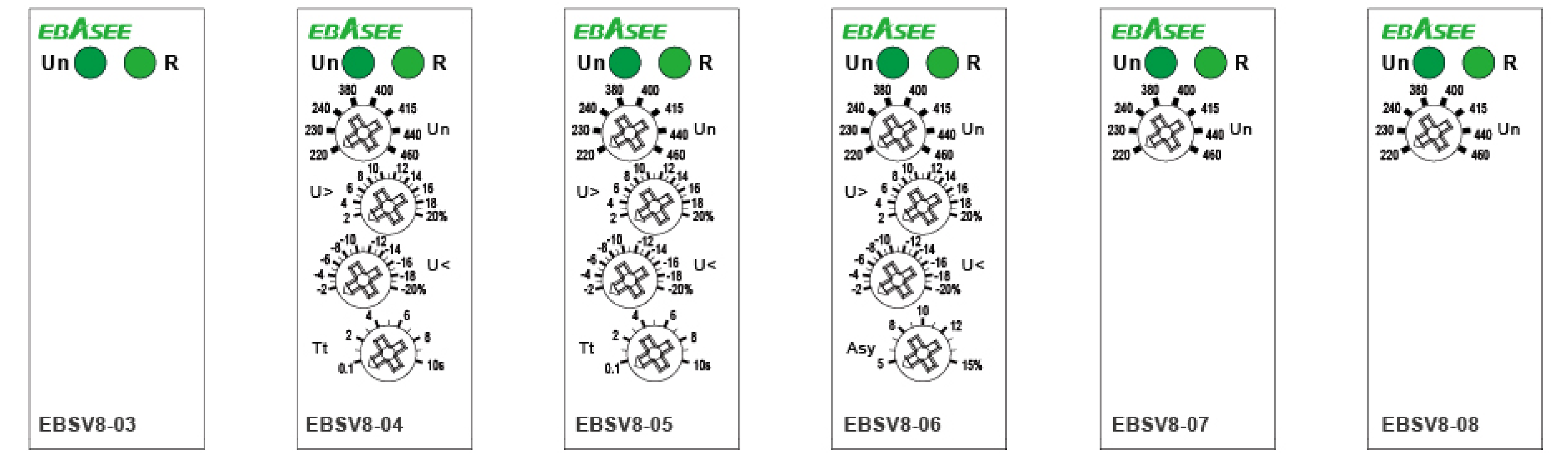
	M460	M265
Function	Monitoring 3-phase voltage	
Monitoring terminals	L1-L2-L3	L1-L2-L3-N
Supply terminals	L1-L2	L1-N
Voltage range	220-230-240-380-400-415-440-460(P-P)	127-132-138-220-230-240-254-265(P-N)
Rated supply frequency	45Hz-65Hz	
Measuring range	176V-552V	101V-318V
Threshold adjustment voltage	2%-20%of Un selected	
Adjustment of asymmetry threshold	5%-15%	
Hysteresis	2%	
Supply indication	green LED	
Time delay	Adjustable 0.1s-10s,10%	
Measurement error	≤1%	
Run up delay at power up	0.5s time delay	
Konb setting accuracy	1% of scale value	
Reset time	1000ms	
Temperature coecient	0.05%/℃,at=20℃(0.05%℉ , at=68℉)	
Output	1×SPDT	
Current rating	10A/AC1	
Switching voltage	250VAC/24VDC	
Min.breaking capacity DC	500mW	
Output indication	red LED	
Mechanical life	1×10^7	
Electrical life(AC1)	1×10^6	

Wiring Diagram



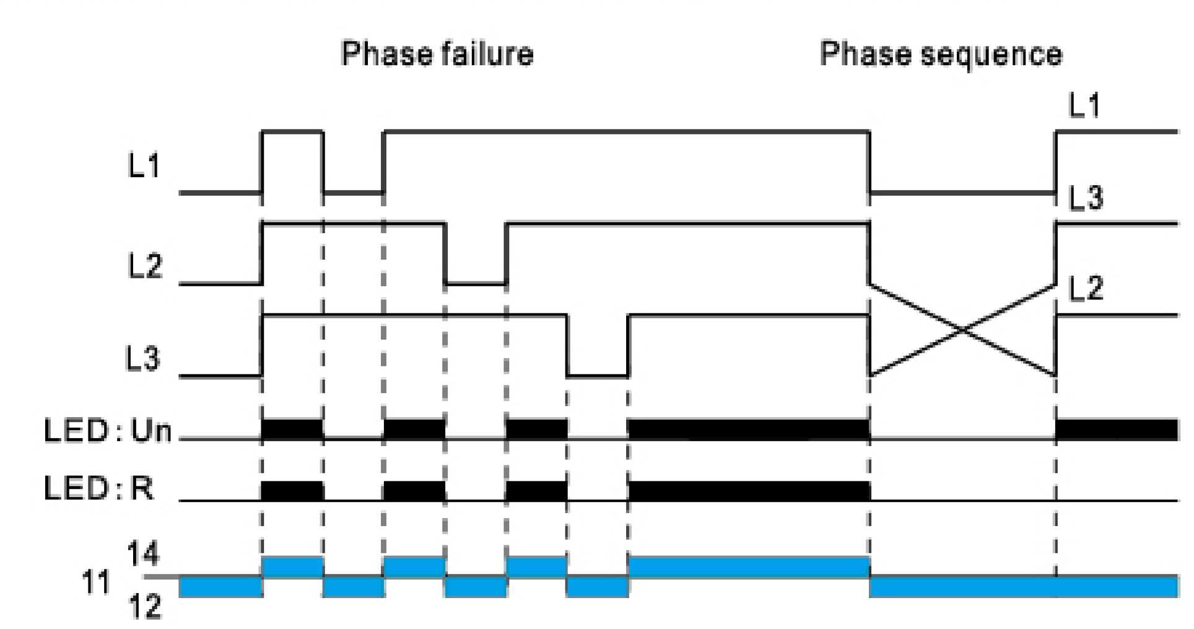
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage cathegory	III.
Pollution degree	2
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)
Dimensions	90×18×64mm
Weight	64g
Standards	IEC/EN 60255-1,IEC/EN61010-1

Panel Diagram

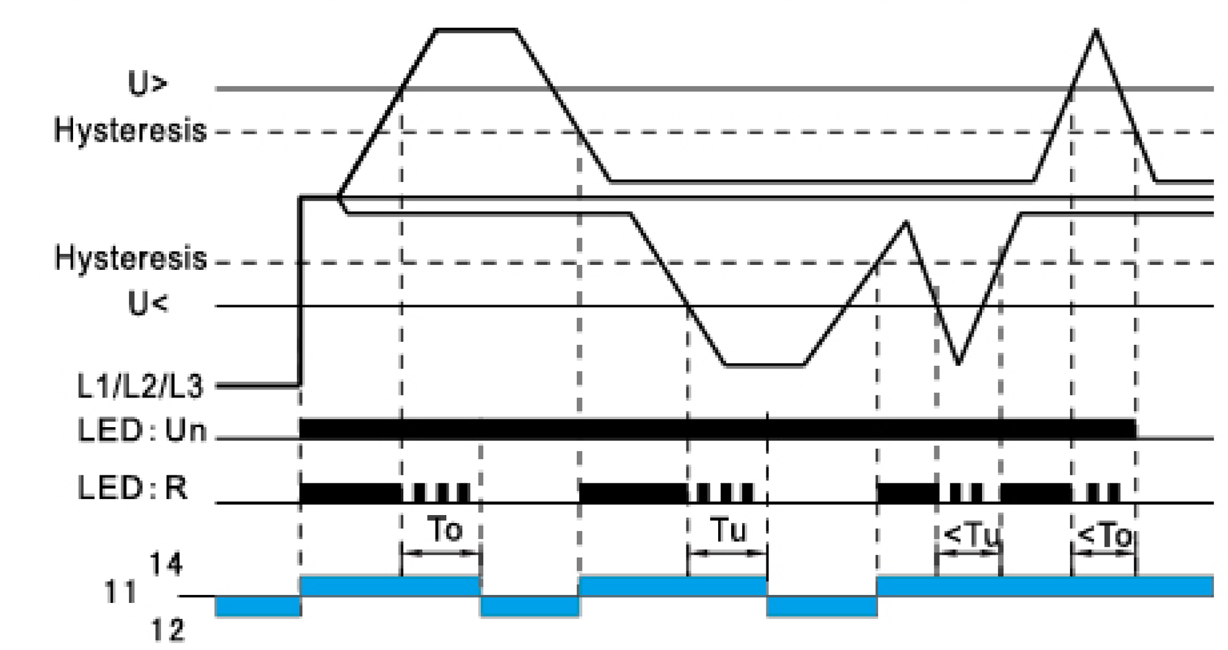


Functions Diagram

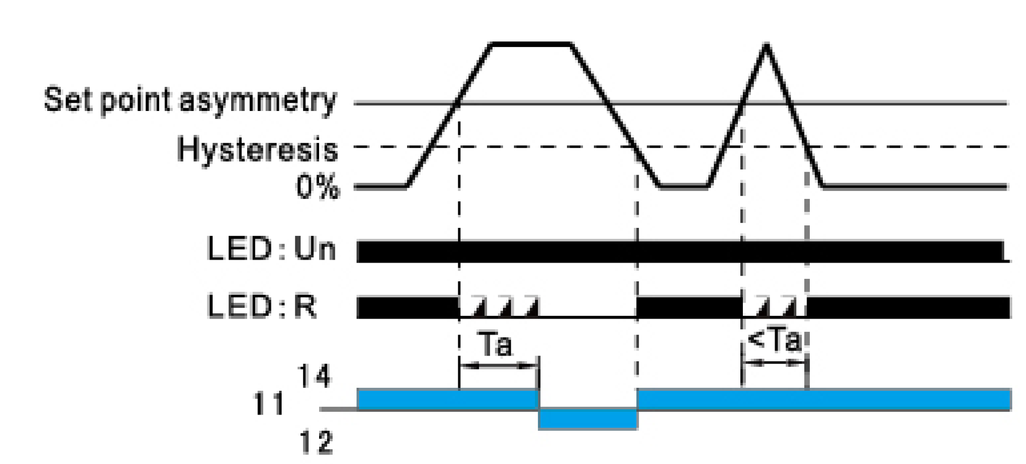
●Phase failure and phase equence function diagram



●Overvoltage and undervoltage function diagram

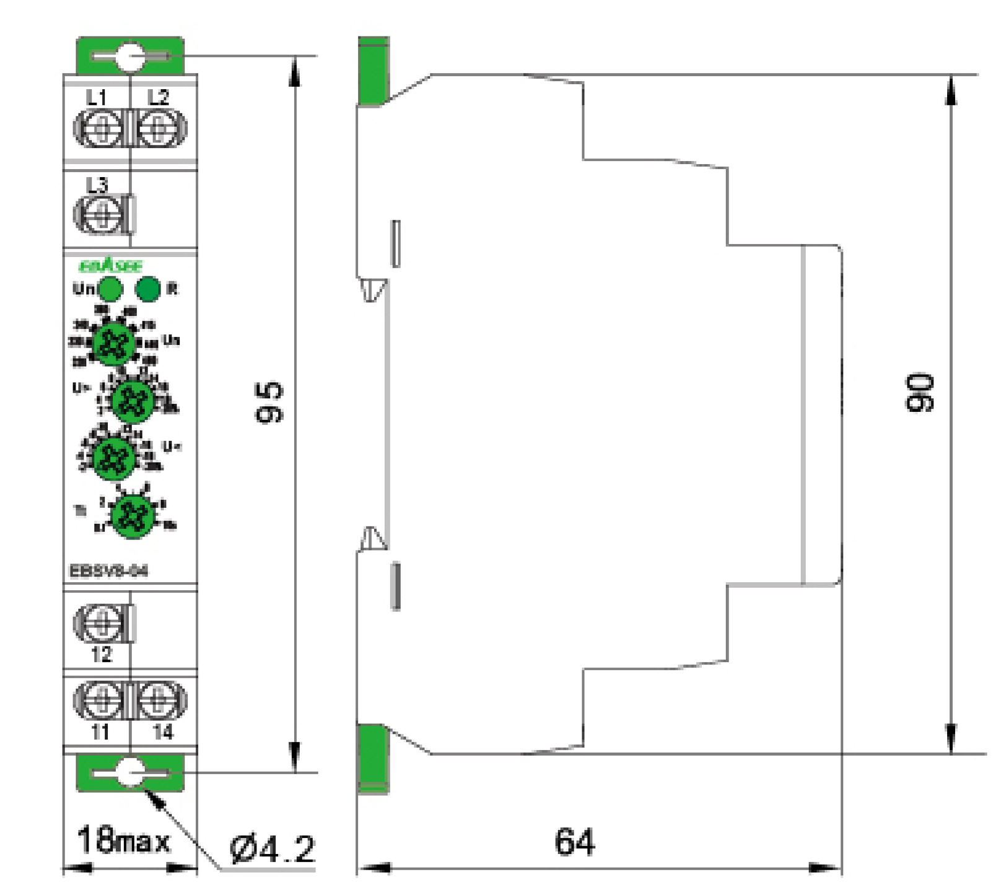


●Asymmetry function diagram



To:Overvoltage threshold tripping delay.
Tu:Undervoltage threshold tripping delay.
Ta:Asymmetry threshold tripping delay.

Dimensions(mm)



Current monitoring relay

General

■Applications

-Serves for monitoring of heating in rail-switches, heating cables, consumption of one-phase motors, indicates current flow.

■Function Features

- -Adjustable delay 0.5 - 10 s to eliminate short current peaks.
- -Flexible adjustment by potentiometer, choice of 6 ranges:
  AC 0.05-0.5A; AC 0.1-1A; AC 0.2-2A; AC 0.5-5A; AC 0.8-8A; AC 1.6-16A
- -Possible to use for current scanning from current transformer.
- -Universal supply AC 24 - 240 V and DC 24 V.
- -Relay status is indicated by LED.
- -1-MODULE,DIN rail mounting.

■Model and connotation

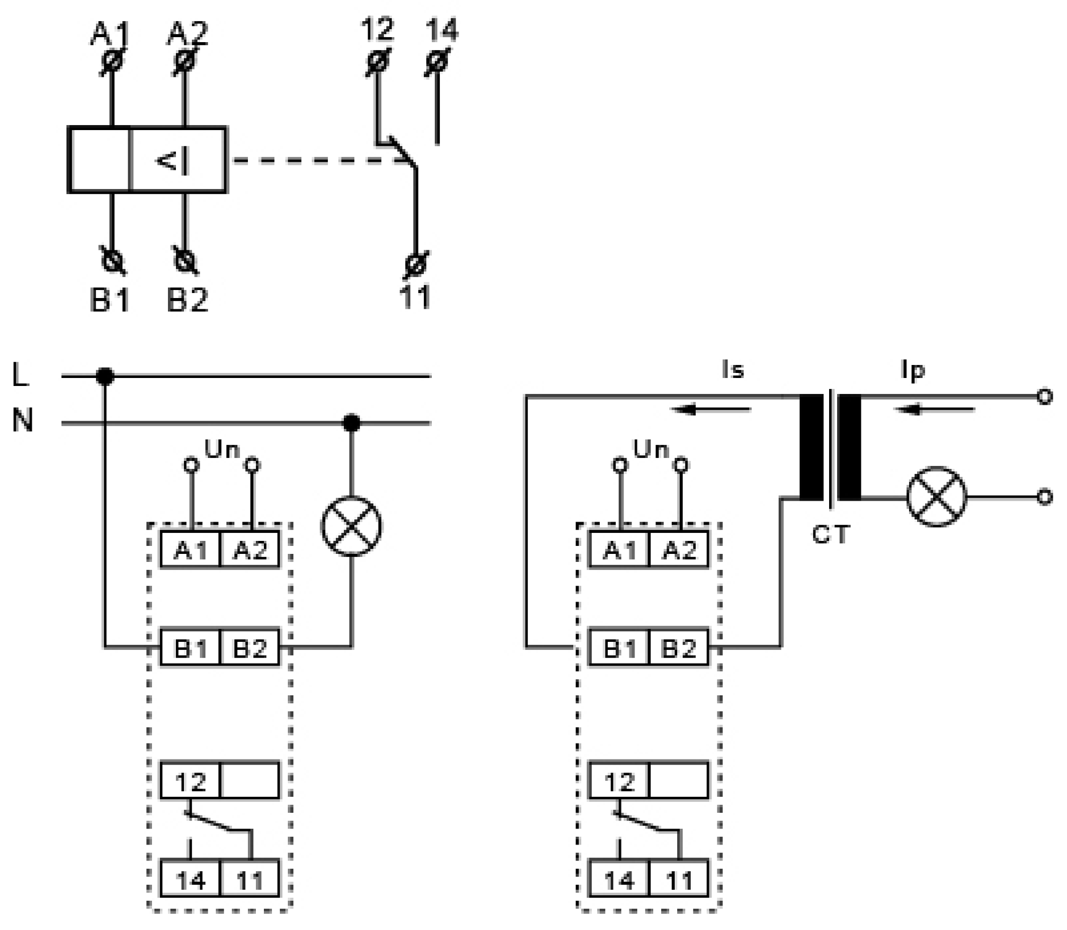
EBSI8 —01 / □

- □ — Current range
  - 0.5:0.05-0.5A 1:0.1-1A 2:0.2-2A
  - 5:0.5-5A 8:0.8-8A 16:1.6-16A
- 01 — Design number
- EBSI8 — EBSI8 Series

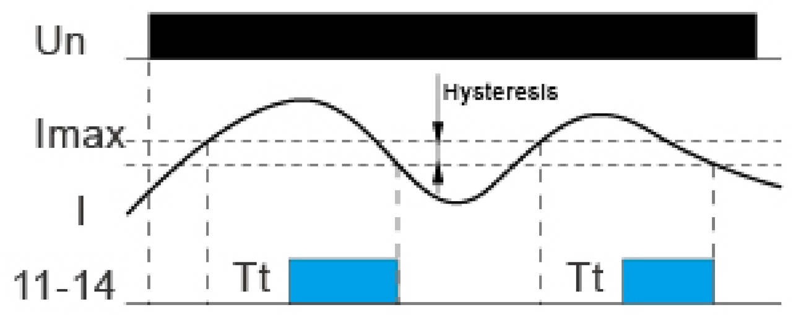
Technical parameters

	EBSI8-01
Function	Monitoring current
Supply terminals	A1-A2
Rated supply voltage	AC 24V-240V or DC 24V
Rated supply frequency	50/60Hz,0
Burden	max.1.5VA
Supply voltage tolerance	-15%;+10%
Current range	0.5A,1A,2A,5A,8A,16A
Current adjustment	potentiometer
Time delay	adjustable 0.5-10 s
Supply indication	green LED
Setting accuracy	5 %
Repeat accuracy	<1 %
Temperature dependancy	< 0.1 % /°C
Limit values tolerance	5 % (10% for 0.05-0.5A range)
Hysteresis	5 %
Temperature coecient	0.05%/℃,at=20℃(0.05%℉，at=68℉)
Output	1×SPDT
Current rating	10A/AC1
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Output indication	red LED
Mechanical life	1×10^7
Electrical life(AC1)	1×10^6
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage cathegory	III.
Pollution degree	2
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5 (AWG 12)
Dimensions	90×18×64mm
Weight	62g
Standards	IEC/EN 62055-1,IEC/EN61010-1

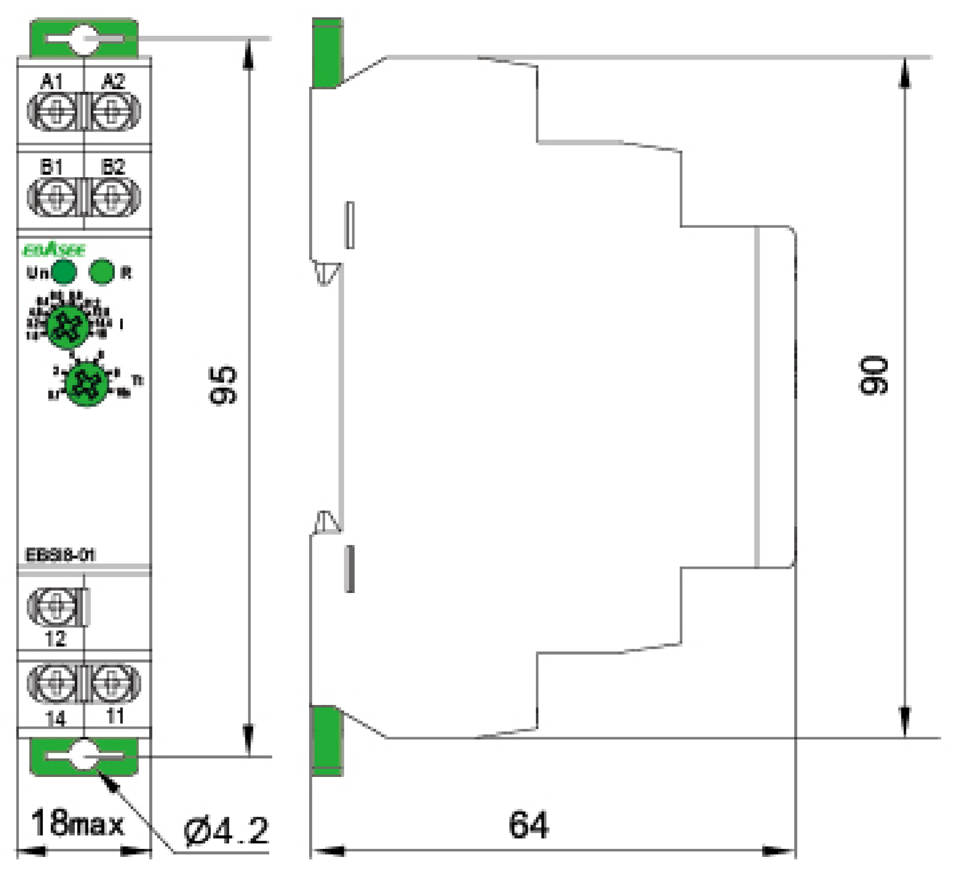
Wiring Diagram



Functions Diagram



Dimensions(mm)



Control Relay

EBASEE

Memory&Latching relay

General

■Applications
-latching relay, controlled by buttons from several loacations can replace three way switches or cross bar switchs thanks to control by buttons(un-limited number,connected inparallel by 2 wires),installation gets more transparent and faster for mounting.

■ Function Features
-Voltage range: AC 230 V,AC/DC12V-240V clamp terminals.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

■Model and connotation

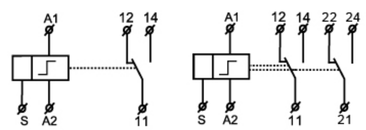
EBSM8 – 01 / □

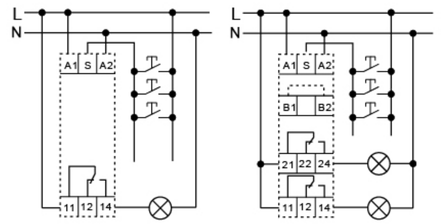
- Rated control supply voltage:
  A230:AC230V
  W240:AC/DC12V-240V
- Number of contacts:
  1:1×SPDT
  2:2×SPDT
- EBSM8 series memory & latching relays

Technical parameters

	EBSM8-01	EBSM8-02
Number of function	1	2
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.7-3VA/DC 0.5-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.12VA/1.3W	AC max.12VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Control terminals	A1-S	
Glow tubes connetions	Voltage range: AC 230V Yes(A1-S)	
Max.amount of glow lamps	230V,max.75 pcs(Measured with glow lamp 0.68mA/230V AC)	
Impulse length	min.25ms	
Temperature coecient	0.05%/℃,at=20℃(0.05%℉，at=68℉)	
Output	1×SPDT	2×SPDT
Current rating	16A/AC1	
Switching voltage	250VAC/24VDC	
Min.breaking capacity DC	500mW	
Output indication	red LED	
Mechanical life	1×10^7	
Electrical life(AC1)	1×10^6	
Reset time	max.200ms	
Operating temperature	-20℃ to +55℃ (-4℉ to 131℉)	
Storage temperature	-35℃ to +75℃ (-22℉ to 158℉)	
Mounting/DIN rail	Din rail EN/IEC 60715	
Protection degree	IP40 for front panel/IP20 terminals	
Operating position	any	
Overvoltage cathegory	III.	
Pollution degree	2	
Max.cable size(mm^2)	solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)	
Dimensions	90×18×64mm	
Weight	1×SPDT: W240-58g,A230-57g	
	2×SPDT: W240-79g,A230-77g	
Standards	IEC/EN 61810-1,IEC/EN61010-1	

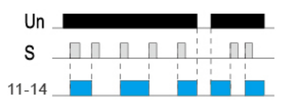
Wiring Diagram



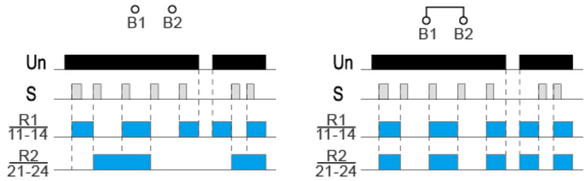


Functions Diagram

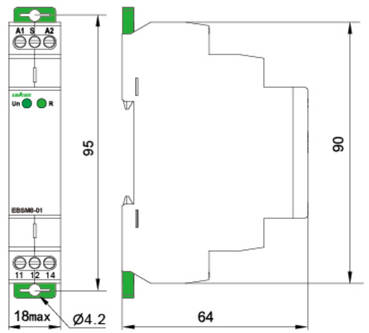
EBSM8-01



EBSM8-02

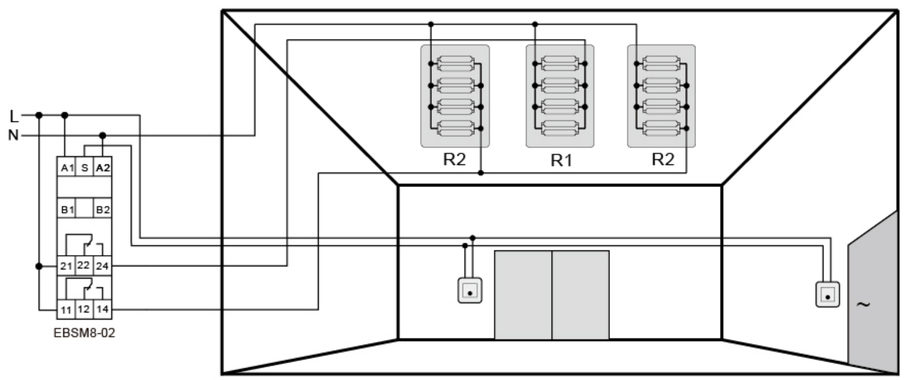


Dimensions(mm)



Example

Example of lighting system which allows control of light intensity by actuating one of the sections R1 and R2 from any location in the room.



General

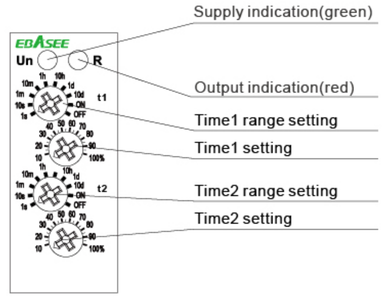
■Applications
-For gradual switching of heavy powers (e.g. el.heating), prevents current strokes in the main.
■Function Features
- 2x Delay ON (2 time relays in one)
-Time scale 0.1s - 10 days divided into 10 time ranges:
0.1s - 1s / 1s - 10s / 0.1min - 1min / 1min - 10min / 0.1h - 1h / 1h - 10hrs / 0.1 day - 1 day / 1 day - 10 days / ON / OFF.
-Times t1 and t2 are independantly adjustable.
- t1 and t2 are switched on after supply voltage connection
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.
■Model and connotation

EBST8 – 2T/□
- Rated control supply voltage: A230:AC230V W240:AC/DC12V-240V
- Double time delay relay
- EBST8 Series

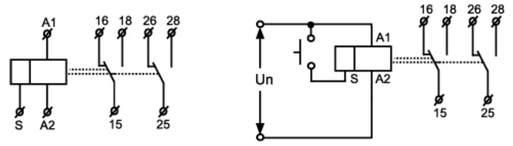
Technical parameters

Technical parameters		EBST8-2T
Function		2x Delay ON
Supply terminals		A1-A2
Voltage range	W240	AC/DC 12-240V(50-60Hz)
Burden		AC 0.09-3VA/DC 0.05-1.7W
Voltage range	A230	AC 230V(50-60Hz)
Power input		AC max.6VA/1.9W
Supply voltage tolerance		-15%;+10%
Supply indication		green LED
Time ranges		0.1s-10days,ON,OFF
Time setting		potentionmeter
Time deviation		10%-mechanical setting
Repeat accuracy		0.2%-set value stability
Temperature coecient		0.05%/℃,at=20℃(0.05%℉，at=68℉)
Output		2×SPDT
Current rating		16A/AC1
Switching voltage		250VAC/24VDC
Min.breaking capacity DC		500mW
Output indication		red LED
Mechanical life		1×10^7
Electrical life(AC1)		1×10^5
Reset time		max.200ms
Operating temperature		-20℃ to +55℃ (-4℉ to 131℉)
Storage temperature		-35℃ to +75℃ (-22℉ to 158℉)
Mounting/DIN rail		Din rail EN/IEC 60715
Protection degree		IP40 for front panel/IP20 terminals
Operating position		any
Overvoltage cathegory		III.
Pollution degree		2
Max.cable size(mm^2)		solid wire max.1×2. 5or 2×1. 5/with sleeve max.1×2. 5(AWG 12)
Dimensions		90×18×64mm
Weight		W240-82g,A230-82g
Standards		EN 61812-1,IEC60947-5-1

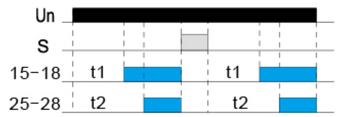
Panel Diagram



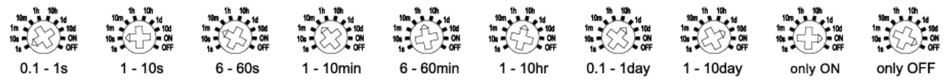
Wiring Diagram



Functions Diagram



Time Range



Dimensions(mm)