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A&B[®]

INDUSTRIAL CONTROL PRODUCT

Everything for electrical safety



A&B[®]

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A&B[®] A&B
Electrical

Applications

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

Feature

- 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

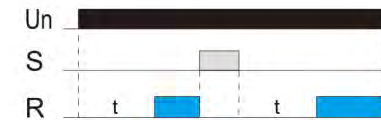
ABT8 - A □ □	Rated control supply voltage
	A230:AC230V; W240:AC/DC12V-240V;
	Number of contacts
	1:1×SPDT; 2:2×SPDT; t:1×SPDT(del)+1×SPDT(ins);
	Function mode
	A:Delay ON; B:Delay ON;
	ABT8 Series

Technical parameters

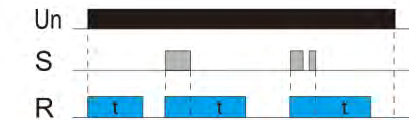
		ABT8-A1/B1	ABT8-A2/B2	ABT8-At/Bt
Function		A:delay ON ; B:delay OFF		
Supply terminals		A1-A2		
Voltage range	W240	AC/DC 12-240V(50-60Hz)		
Burden		AC 0.09-3VA/DC 0.05-1.7W		
Voltage range	A230	AC 230V(50-60Hz)		
Power input		AC max.6VA/1.3W	AC max.6VA/1.9W	
Supply voltage tolerance		-15%;+10%		
Supply 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 coefficient		0.05%/°C,at=20°C(0.05%°F, at=68°F)		
Output		1×SPDT	2×SPDT	1×SPDT(del)+1×SPDT(ins)
Current rating		1×16A(AC1)	2×16A(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°C to +55°C (-4°F to 131°F)		
Storage temperature		-35°C to +75°C (-22°F to 158°F)		
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		EN 61812-1,IEC6947-5-1		

Functions Diagram

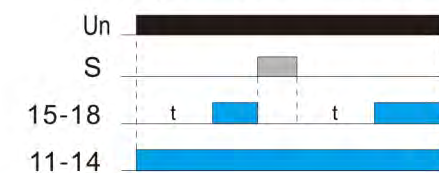
A - Delay ON



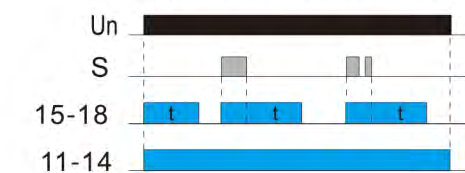
B - Delay OFF



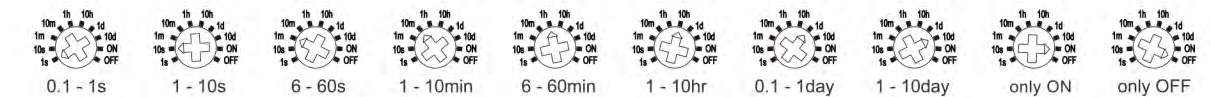
At-Delay ON+Instantaneous contact



Bt-Delay OFF+Instantaneous contact

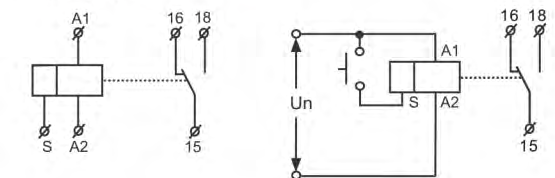


Time Range

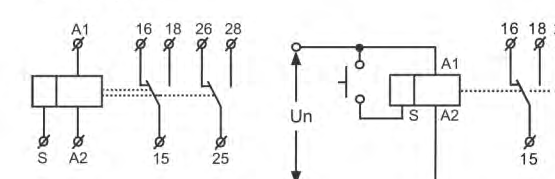


Wiring Diagram

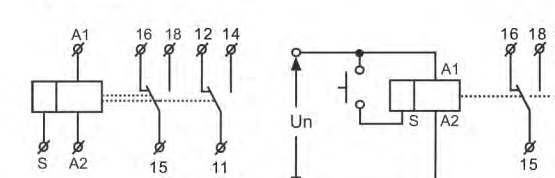
ABT8-A1/B1



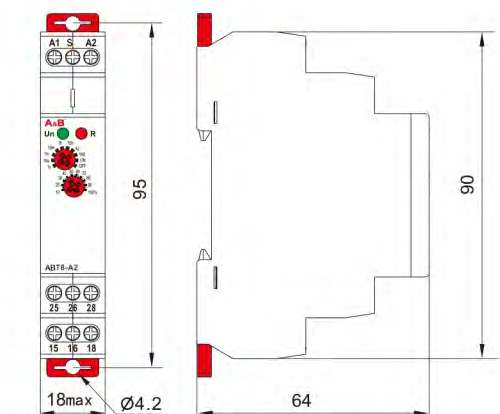
ABT8-A2/B2



ABT8-At/Bt



Dimensions(mm)





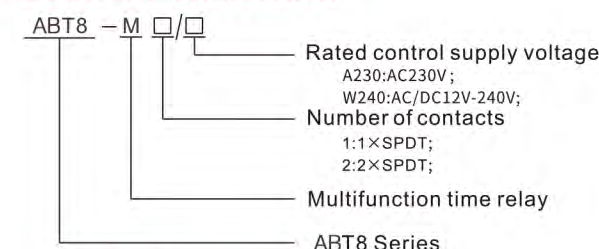
Applications

-Multifunction time relay can be used for electrical appliances, control of lights, heating, motors, pumps and fans (10 functions, 10 time ranges, multi-voltage).

Feature

- 10 functions: - 5 time functions controlled by supply voltage
- 4 time functions controlled by control input
- 1 function of latching relay
- Comfortable and well-arranged function and time-range setting by rotary switches.
- 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



Technical parameters

	ABT8-M1	ABT8-M2
Function	A,B,C,D,E,F,G,H,I,J	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	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 coefficient	0.05%/°C,at=20°C(0.05%°F, at=68°F)	
Output	1×SPDT	2×SPDT
Current rating	1×16A(AC1)	2×16A(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°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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:W240-62g,A230-60g	2×SPDT:W240-82g,A230-81g
Standards	EN 61812-1,IEC60947-5-1	

Functions Diagram

A:On Delay (Power On)

When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.



B:Interval (Power On)

When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelfstate. Trigger switch is not used in this function.



C:Repeat Cycle (Starting Off)

When input voltage U is applied, time delay t begins. When time delay t is complete, relay contacts R change state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



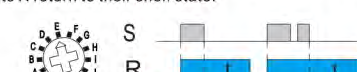
D:Repeat Cycle (Starting On)

When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.



E:Off Delay (S Break)

Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.



F:Single Shot

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.



G:Single Shot Trailing Edge (Non-Retriggerable)

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the relay contacts R return to their normal condition unless the trigger switch S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger switch S at a rate faster than the preset time will cause the relay contacts R to remain closed. If input voltage U is removed, relay contacts R return to their shelf state



H:On/Off Delay

Input voltage U must be applied continuously. When trigger switch S is closed, time delay t begins. When time delay t is complete, relay contacts R change state and remain transferred until trigger switch S is opened. If input voltage U is removed, relay contacts R return to their shelf state.



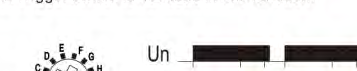
I:Latching relay

Input voltage U must be applied continuously. Output changes state with every trigger switch S closure. If input voltage U is removed, relay contacts R return to their shelf state.

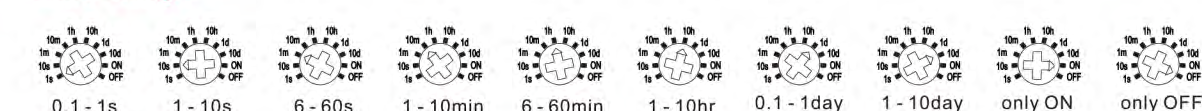


J:Pulse generator

Upon application of input voltage U, a single output pulse of 0.5 seconds is delivered to relay after time delay t. Power must be removed and re-applied to repeat pulse. Trigger switch is not used in this function.

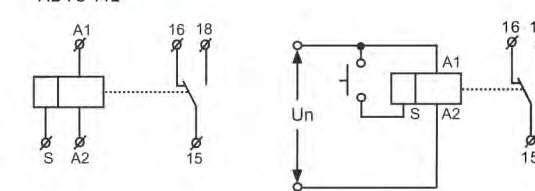


Time Range

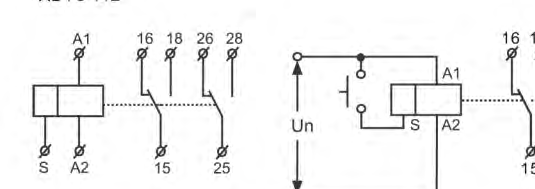


Wiring Diagram

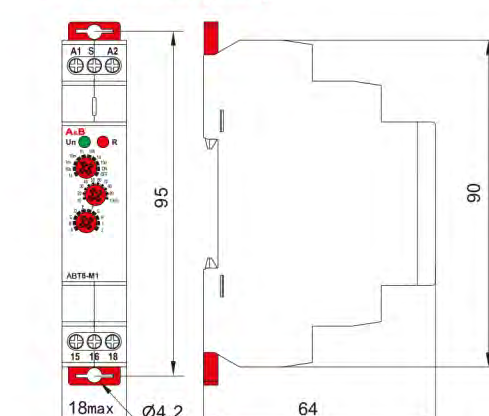
ABT8-M1



ABT8-M2



Dimensions(mm)



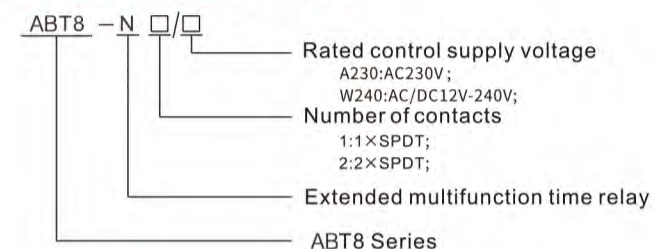
Applications

-Multifunction time relay can be used for electrical appliances, control of lights, heating, motors, pumps and fans (10 functions, 10 time ranges, multi-voltage).

Feature

- 10 functions: - 8 time functions controlled by supply voltage
- 2 time functions controlled by control input
- Comfortable and well-arranged function and time-range setting by rotary switches.
- 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



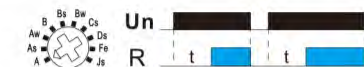
Technical parameters

	ABT8-N1	ABT8-N2
Function	A,As,Aw,B,Bs,Bw,Cs,Ds,Fe,Js	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	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 coefficient	0.05%/°C,at=20°C(0.05%°F, at=68°F)	
Output	1xSPDT	2xSPDT
Current rating	1x16A(AC1)	2x16A(AC1)
Switching voltage	250VAC/24VDC	
Min.breaking capacity DC	500mW	
Output indication	red LED	
Mechanical life	1x10 ⁷	
Electrical life(AC1)	1x10 ⁵	
Reset time	max.200ms	
Operating temperature	-20°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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.1x2.5or 2x1.5(with sleeve max.1x2.5(AWG 12)	
Dimensions	90x18x64mm	
Weight	1xSPDT:W240-62g,A230-60g	2xSPDT:W240-82g,A230-81g
Standards	EN 61812-1,IEC60947-5-1	

Functions Diagram

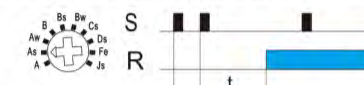
A:On delay (Power On)

When relay Un is powered on, the relay starts to delay, and the output contact is closed after delay t. After the relay Un is de energized, the output contact R is disconnected and the S control signal is invalid in this function mode.



As:On delay (S rising edge start)

The relay Un is in the energized state. When the S control signal is triggered, the relay starts to delay. After the delay t, the output contact R is closed and held. During the delay period, if the signal is triggered again, restart the delay. When the relay Un is de energized, the relay output contact R opens.



Aw:On delay (S trigger time accumulation)

When the relay Un is energized and the cumulative delay during the closing of S control signal reaches t, The output contact R is closed.



B:Interval (Power On)

When relay Un is powered on, the relay output contact R will be closed immediately and start delay. After delay t, the output contact R will be disconnected. If the delay time t does not arrive and relay Un is powered off, the output contact R will be disconnected, and the S control signal is invalid in this function mode.

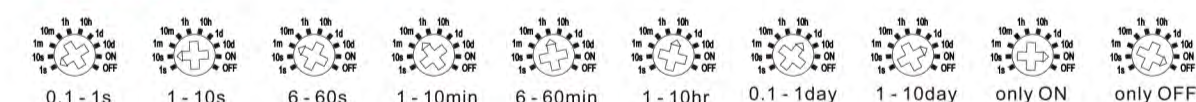


Bs:Off delay(S rising edge trigger start)

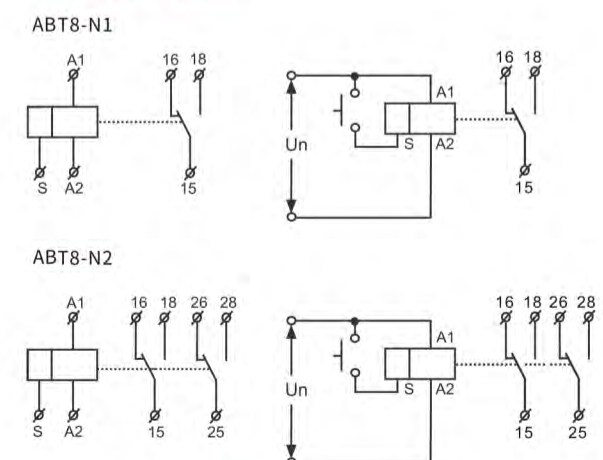
The relay Un is in the energized state. When the S control signal is connected, the output contact R of the relay is closed and starts to delay. After the delay t, the output contact R is disconnected. If the S control signal is connected again during the delay, the delay t is cleared and delayed again.



Time Range



Wiring Diagram



Bw:Off delay(S trigger time accumulation)

When the relay Un is powered on, the the output contact R is closed. When the cumulative delay during the closing of S control end reaches t, The output contact R is open.



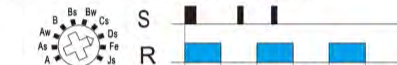
Cs:Repeat Cycle (Starting Off ,S rising edge start)

The relay Un is in the energized state. When the S control signal is closed, the relay starts to delay and is input after a delay time t, The output contact R is closed, and after the delay time t, the output contact R of the relay is disconnected. This cycle will repeat until relay Un is de energized.



Ds:Repeat Cycle (Starting On ,S rising edge trigger start)

The relay Un is in the energized state. When the S control signal is closed, the relay output contact R closes and start delay, the output contact R is disconnected after delay t, and the relay output contact R is closed after delay t, This cycle will repeat until relay Un is de energized.



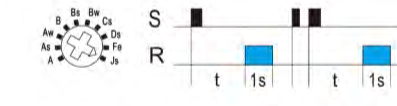
Fe:On and off delay (Triggered by rising and falling edges of S)

The relay Un is in the energized state. When the S control signal is connected, the output contact R closed and starts to delay, with a delay of t the output contact R open. When the S control signal is disconnected, the output contact is closed and starts to delay, with a delay of t the output contact R open.

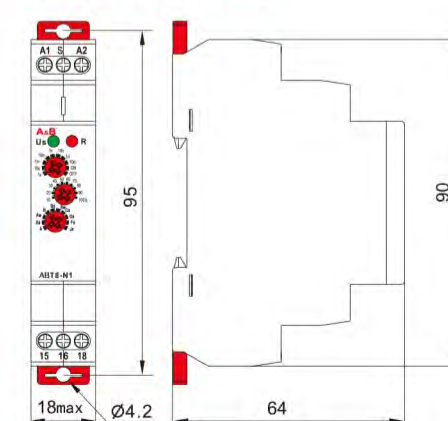


Js:Pulse output (Triggered by rising edge of S)

The relay Un is in the energized state. when the S control signal is connected, the relay starts to delay, with a delay of t, the relay output contact R is closed for 1 second and then the output contact R open.



Dimensions(mm)





Dual function time relay

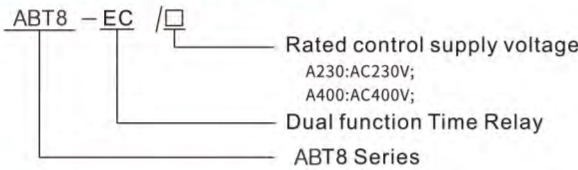
Applications

-Dual function time relay can be used for industrial equipment, lighting control, heating element control, motor and fan control, with two delay modes, and the delay range covers 0.1 seconds to 10days.

Feature

- Two delay modes can be set.
- Supports AC230V ,AC/DC24V two kinds of working voltage.
- Ultra wide delay range, 0.1 seconds - 10 days can be set..
- The working state of the relay is indicated by the LED indicator.
- Ultra small size, only 18mm width, 35mm rail installation.

Model and connotation



Technical parameters

	ABT8-EC
Function	ON delay, Delay off
Supply terminals	A1-A2(AC230V,AC380V),A1-A3(AC/DC24V)
Voltage range	AC230V(50-60Hz) or AC/DC24V, AC380V(50-60Hz)
Power input	AC max.6VA/1.3W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	0.1s-10day
Time setting	potentionmeter
Time deviation	≤10%
Repeat accuracy	0.2%-set value stability
Temperature coefficient	0.05%/°C,at=20°C(0.05%/°F, at=68°F)
Output	1×SPDT
Current rating	1×10A(AC1)
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Output indication	red LED
Mechanical life	1×10 ⁷
Electrical life(AC1)	1×10 ⁵
Reset time	max.200ms
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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	52g
Standards	EN 61812-1,IEC60947-5-1

Functions Diagram

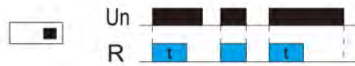
Delay on

When the relay Un is powered on, the relay starts to delay, and the output contact closes after delay. When Un is powered off, the output contact is disconnected.

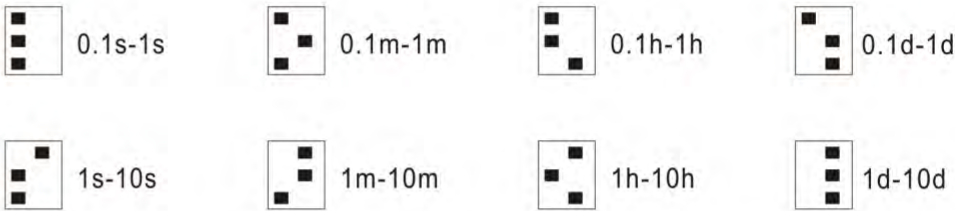


Delay off

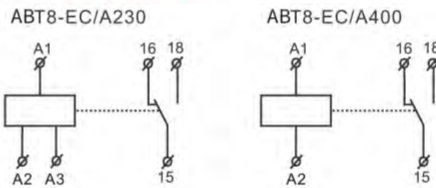
When the relay Un is powered on, the output contact of the relay will close immediately and start to delay, and output after delay,The contact is open. If the delay time t is not up to the power loss of relay Un, the output contact is open.



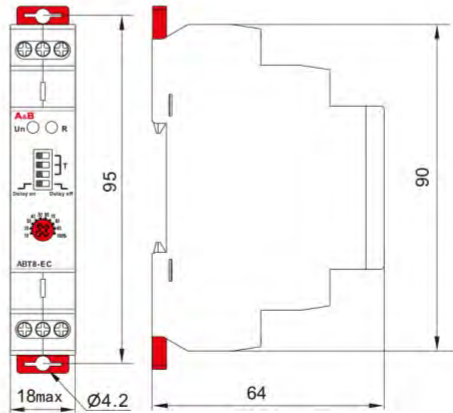
Time Range



Wiring Diagram



Dimensions(mm)



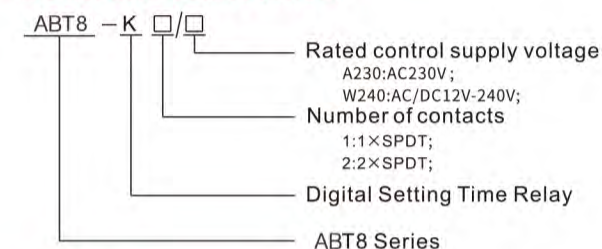
Applications

-Multifunctional time relay with digital settings can be used for industrial equipment, lighting control, heating element control, motor and fan control. It has four delay modes and the delay range covers 0.1 seconds to 99 hours.

Feature

- Four functional modes can be set.
- Through digital dialing settings, it is easy to operate and set more precisely.
- Extra wide delay range, 0.1 seconds - 99 hours can be set.
- With AC/DC 12V-240V ultra wide operating voltage specifications are optional.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

Model and connotation



Technical parameters

	ABT8-K1	ABT8-K2
Function	A,B,E,F,	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	AC max.6VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Time ranges	0.1s-99h,ON,OFF	
Time setting	Digital switch	
Time deviation	≤1%	
Repeat accuracy	0.2%-set value stability	
Temperature coefficient	0.05%/°C,at=20°C(0.05%/°F, at=68°F)	
Output	1×SPDT	2×SPDT
Current rating	1×16A(AC1)	2×8A(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°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
Mounting/DIN rail	Din rail EN/IEC 60715	
Protection degree	IP40 for front panel/IP20 terminals	
Operating position	any	
Overvoltage category	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:W240-64g,A230-64g	2×SPDT:W240-72g,A230-72g
Standards	EN 61812-1,IEC60947-5-1	

Functions Diagram

A:On Delay (Power On)

When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.



B:Interval (Power On)

When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelf state. Trigger switch is not used in this function.



E:Off Delay (S Break)

Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.

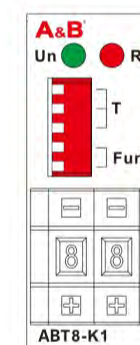
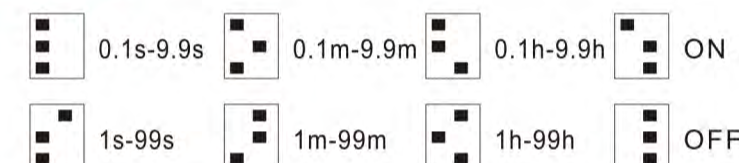


F:Single Shot

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.



Time Range

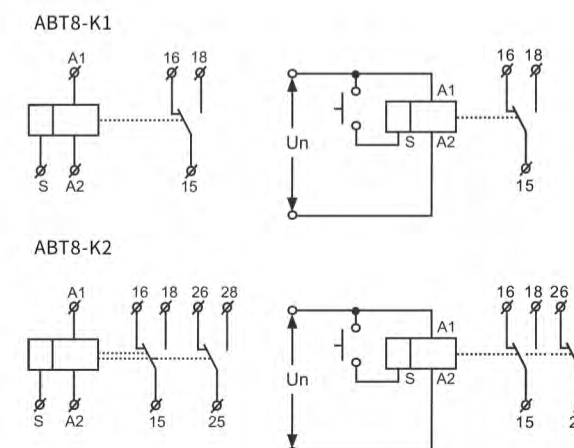


Time Range setting

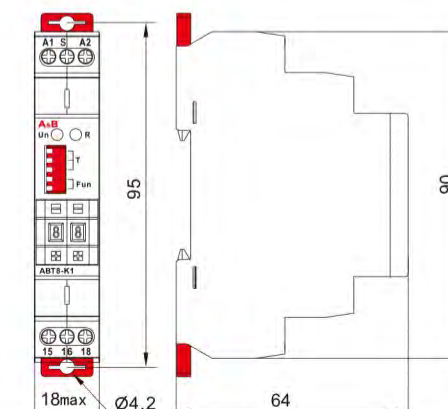
Fuction setting

Time setting

Wiring Diagram



Dimensions(mm)





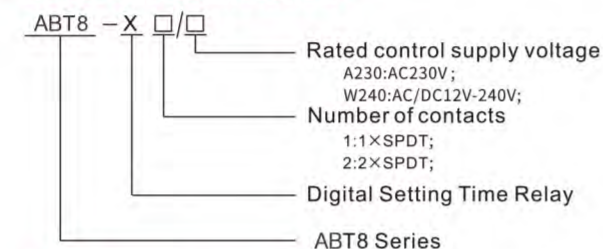
Applications

- Multifunctional time relay can be used for industrial equipment, lighting control, heating element control, motor, fan control.
- With 20 delay modes, the delay range covers 0.1 seconds to 99 days.

Feature

- 20 delay modes:
 - 5 delay modes controlled by power supply
 - 13 delay modes controlled by signal
 - ON, OFF mode
- Ultra wide delay range, 0.1 seconds - 99 days can be set.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

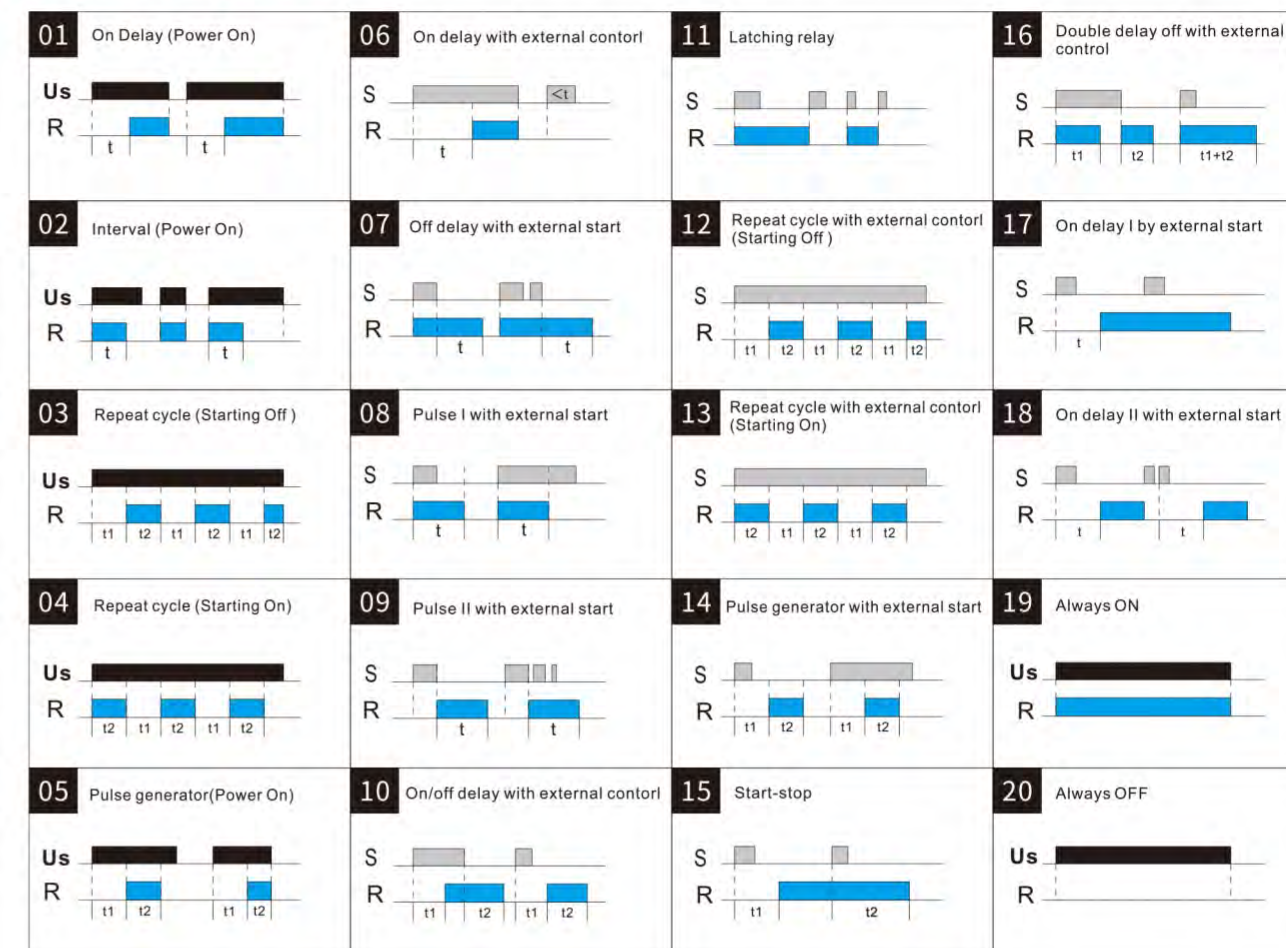
Model and connotation



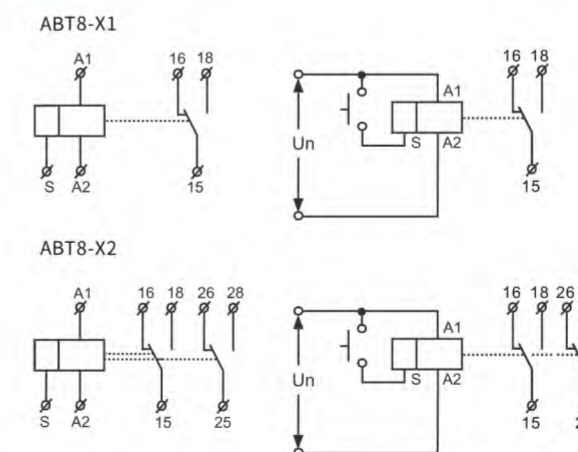
Technical parameters

	ABT8-X1	ABT8-X2
Function	20 functions	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	AC max.6VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Time ranges	0.1s-99day,ON,OFF	
Time setting	Key setting	
Time deviation	≤1%	
Repeat accuracy	0.2%-set value stability	
Temperature coefficient	0.05%/°C,at=20°C(0.05°F, at=68°F)	
Output	1×SPDT	2×SPDT
Current rating	1×16A(AC1)	2×16A(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°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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:W240-62g,A230-60g	2×SPDT:W240-82g,A230-81g
Standards	EN 61812-1,IEC60947-5-1	

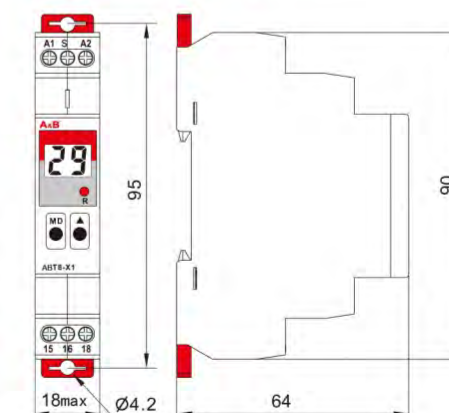
Functions Diagram



Wiring Diagram



Dimensions(mm)





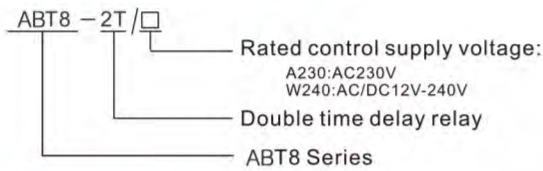
Applications

-For gradual switching of heavy powers (e.g. el.heating), prevents current strokes in the main.

Feature

- 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 independently adjustable.
- t1 and t2 are switched on after supply voltage connection.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

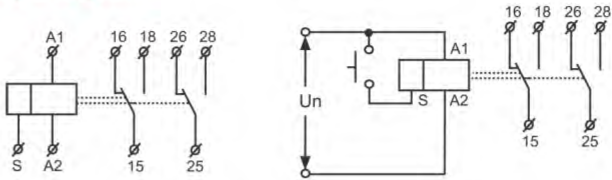
Model and connotation



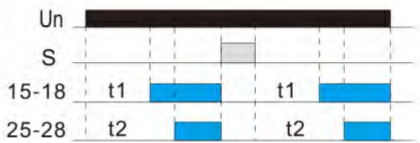
Technical parameters

	ABT8-2T
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 coefficient	0.05%/°C,at=20°C(0.05%/°F, at=68°F)
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°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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

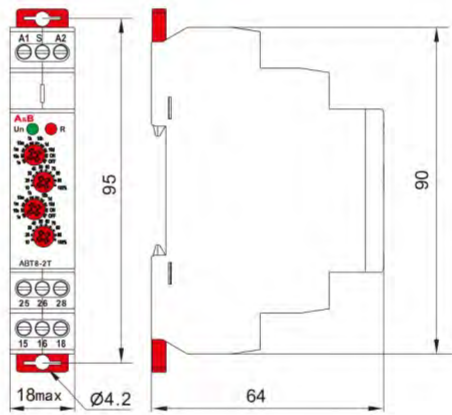
Wiring Diagram



Functions Diagram



Dimensions(mm)





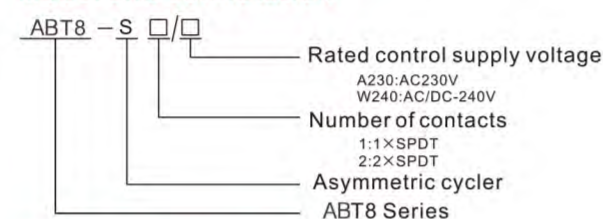
Applications

-It is used for regular room ventilation, cyclic dehumidification, light control, circulating pumps, noon signs, etc.

Feature

- 2 time functions:
- Cycler beginning with pulse
- Cycler beginning with pause
- Function choice is done by an external jumper of terminals S-A1.
- Time scale 0.1 s - 100 days divided into 10 time ranges:
(0.1 s - 1 s / 1 s - 10 s / 0.1 min - 1 min / 1 min - 10 min / 0.1 hrs - 1 h / 1 hrs - 10 hrs / 0.1 day - 1 day / 1 day - 10 days / 3 days - 30 days / 10 days - 100 days).
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

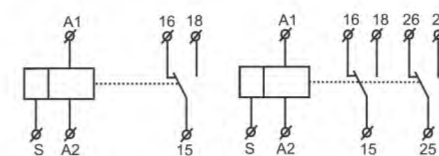
Model and connotation



Technical parameters

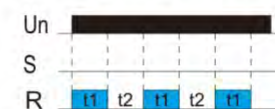
	ABT8-S1	ABT8-S2
Function	Asymmetric cycler time relay	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	AC max.6VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Time ranges	0.1s-10days	
Time setting	potentionmeter	
Time deviation	10%-mechanical setting	
Repeat accuracy	0.2%-set value stability	
Temperature coefficient	0.05%/°C, at=20°C(0.05%/°F, at=68°F)	
Output	1×SPDT	2×SPDT
Current rating	1×16A(AC1)	2×16A(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°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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:W240-62g,A230-61g	2×SPDT:W240-82g,A230-82g
Standards	EN 61812-1,IEC60947-5-1	

Wiring Diagram

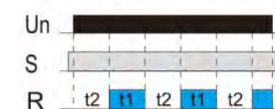


Functions Diagram

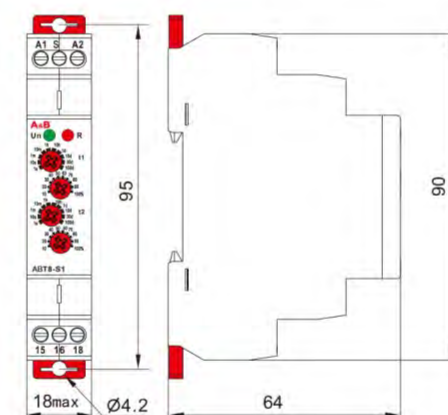
Cycler beginning with pulse



Cycler beginning with pause(jumper A1-S)



Dimensions(mm)





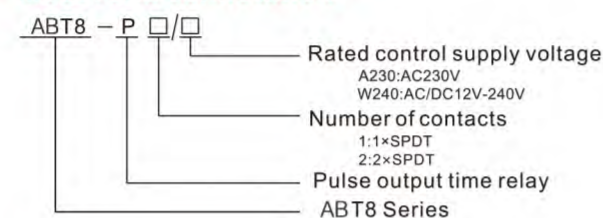
Applications

-It is used to delay and generate a pulse, which is used to delay the connection of a load for a period of time.

Feature

- Separate delay time and pulse width setting can set different delay time.
- Time scale 0.1 s - 100 days.
- The delay time can be reset by shorting S-A1.
- With AC/DC 12V-240V ultra wide operating voltage specifications are optional.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

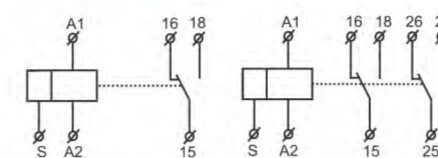
Model and connotation



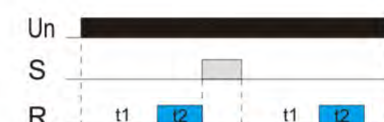
Technical parameters

	ABT8-P1	ABT8-P2
Function	Pulse output time relay	
Supply terminals	A1-A2	
Voltage range	AC/DC 12-240V(50-60Hz)	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Voltage range	AC 230V(50-60Hz)	
Power input	AC max.6VA/1.3W	AC max.6VA/1.9W
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Time ranges	0.1s-100days	
Time setting	potentionmeter	
Time deviation	10%-mechanical setting	
Repeat accuracy	0.2%-set value stability	
Temperature coefficient	0.05%/°C, at=20°C(0.05%/°F, at=68°F)	
Output	1×SPDT	2×SPDT
Current rating	1×16A(AC1)	2×16A(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°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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:W240-62g,A230-61g	2×SPDT:W240-82g,A230-82g
Standards	EN 61812-1,IEC60947-5-1	

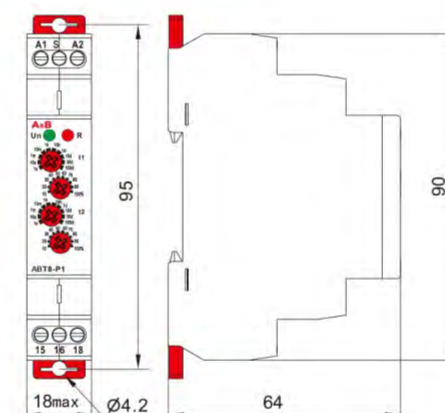
Wiring Diagram



Functions Diagram



Dimensions(mm)





Right-Left(inverser) time relay

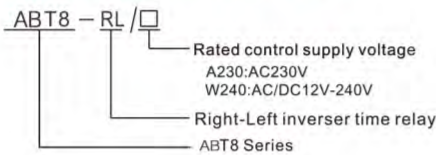
Applications

-Right-Left(inverser) timer relay are used for 2 different loads,which works by turn.
First load starts working,stops and waits(off) and second load starts working.Both working time is same.

Feature

- The default is right load first. You can select left load first by shorting S-A1
- Time scale 0.1 s - 100 days divided into 10 time ranges:
(0.1 s - 1 s / 1 s - 10 s / 0.1 min - 1 min / 1 min - 10 min / 0.1 hrs - 1 h / 1 hrs - 10 hrs / 0.1 day - 1 day / 1 day - 10 days / 3 days - 30 days / 10 days - 100 days).
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

Model and connotation

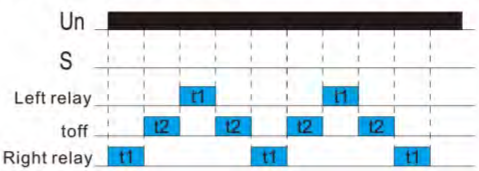


Technical parameters

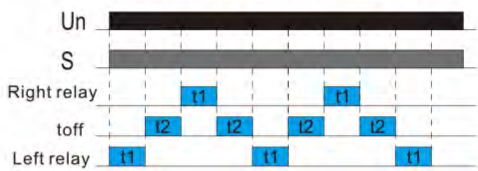
	ABT8-RL
Function	Right-Left inverter time relay
Supply terminals	A1-A2
Voltage range	AC/DC 12-240V(50-60Hz)
Burden	AC 0.7-3VA/DC 0.5-1.7W
Voltage range	AC 230V(50-60Hz)
Power input	AC max.12VA/1.3W AC max.12VA/1.9W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	0.1s-10days
Time setting	potentionmeter
Time deviation	5%-mechanical setting
Repeat accuracy	0.2%-set value stability
Temperature coecient	0.05%/°C,at=20°C(0.05%°F, at=68°F)
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 ⁶
Reset time	max.200ms
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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,EN61010-1

Functions Diagram

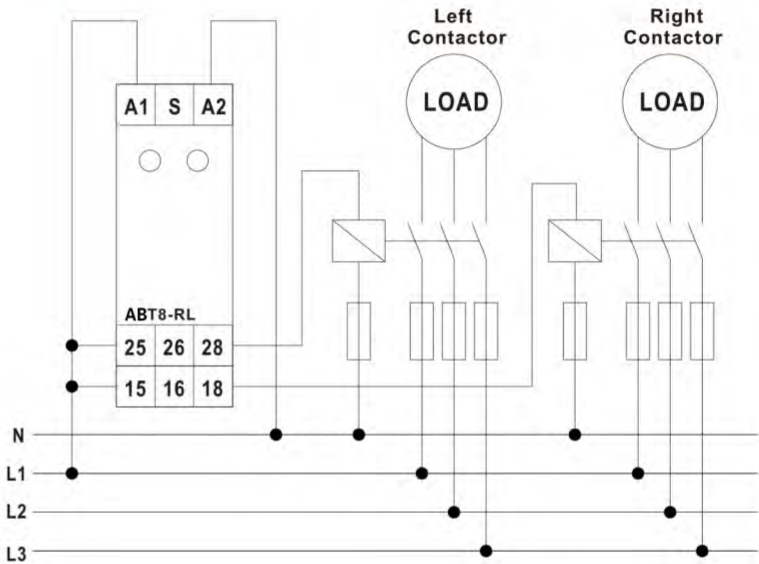
Right load first by disconnecting S-A1



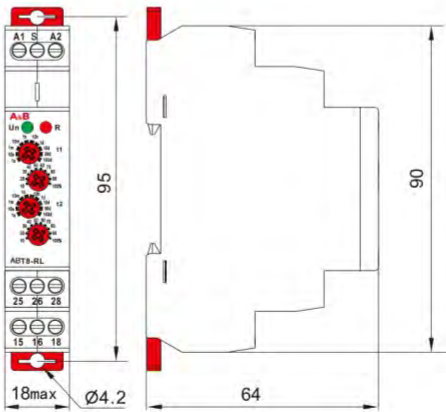
Left load first by connecting S-A1



Wiring Diagram



Dimensions(mm)





True Delay OFF without supply voltage

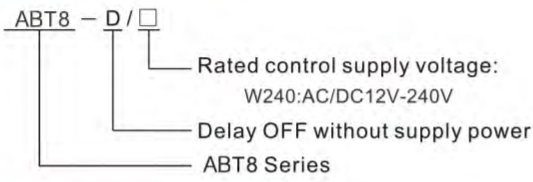
Applications

-Back-up source for Delay OFF in case of voltage failure (emergency lighting, emergency respirator, or protection of el. controlled doors - in case of fire).

Feature

- Time range (adjustable by rotary switch and fine setting by potentiometer): 0.1 s - 10 min.
- Voltage range: AC/DC12-240V , clamp terminals.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

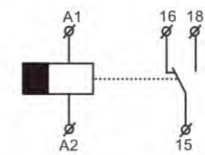
Model and connotation



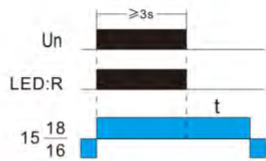
Technical parameters

	ABT8-D
Function	Delay OFF without supply power
Supply terminals	A1-A2
Voltage range	AC/DC 12-240V(50-60Hz)
Burden	AC 0.09-3VA/DC 0.05-1.5W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	0.1s-10min
Time setting	potentionmeter
Time deviation	10%-mechanical setting
Repeat accuracy	0.2%-set value stability
Mininum power time	3s
Temperature coefficient	0.05%/°C, at=20°C(0.05%°F, at=68°F)
Output	1×SPDT
Current rating	16A/AC1
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Output indication	red LED
Mechanical life	1×10 ⁶
Electrical life(AC1)	5×10 ⁴
Reset time	max.200ms
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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	66g
Standards	EN 61812-1,IEC60947-5-1

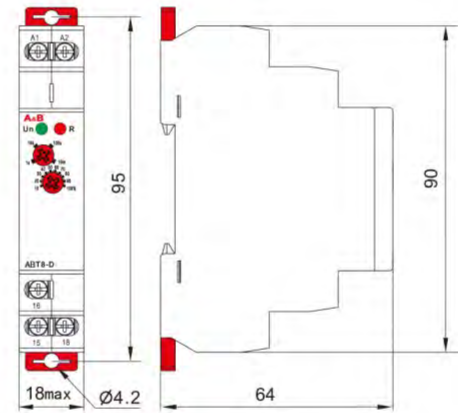
Wiring Diagram



Functions Diagram



Dimensions(mm)





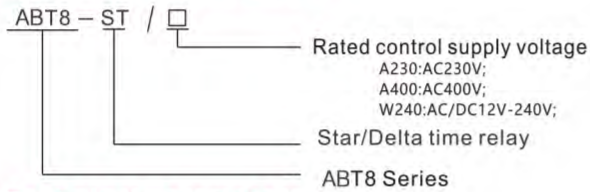
Applications

-Designated for delay ON of motors star/delta.

Feature

- Time t1 (star) :
time scale 0.1 s - 10min divided into 4 time ranges
rough time setting by rotary switch.
- Time t2 (delay) :
time scale 0.1 s - 1 s
time setting by potentiometer
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

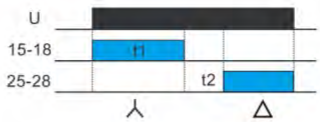
Model and connotation



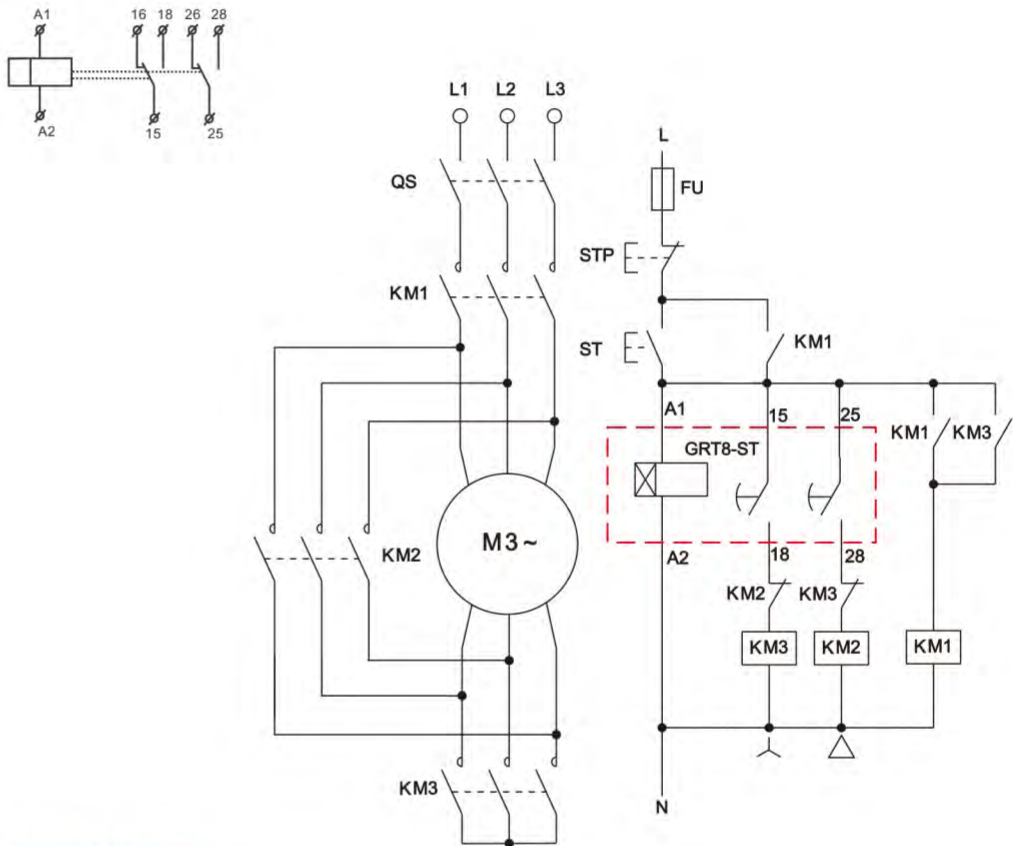
Technical parameters

	ABT8-ST
Function	Star/Delta time relay
Supply terminals	A1-A2
Voltage range	AC/DC 12-240V(50-60Hz)
Burden	AC 0.3-2VA/DC 0.1-1.2W
Voltage range	AC 230V/AC400V(50-60Hz)
Power input	AC max.6VA/1.3W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	Range of time delay t1: 0.1 s - 10 min,Switch time t2: 0.1 s-1 s
Time setting	potentionmeter
Time deviation	10%-mechanical setting
Repeat accuracy	0.2%-set value stability
Temperature coefficient	0.05%/°C,at=20°C(0.05%°F, at=68°F)
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°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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,A230-80g
Standards	EN 61812-1,IEC60947-5-1

Functions Diagram



Wiring Diagram



Dimensions(mm)





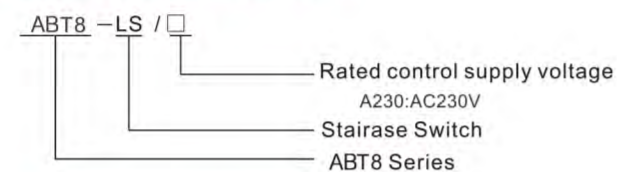
Applications

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

Feature

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

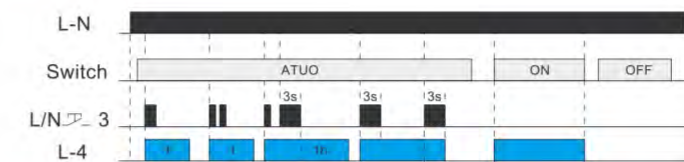
Model and connotation



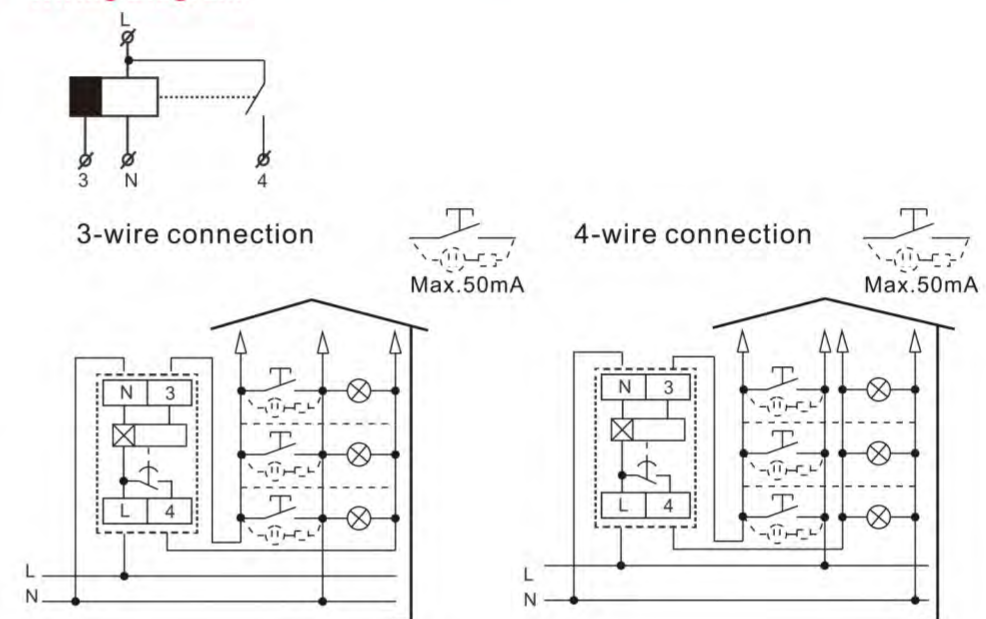
Technical parameters

	ABT8-LS
Function	delay off reacting to contact switching
Supply terminals	L-N
Voltage range	AC 230V(50-60Hz)
Power input	AC max.6VA/1.3W
Supply voltage tolerance	-15%;+10%
Supply indication	green LED
Time ranges	AUTO:0.5-20min ON OFF
Time setting	potentionmeter
Time deviation	10%-mechanical setting
Repeat accuracy	0.2%-set value stability
Mininum power time	200ms
Glow tubes connctions	Yes(N-3 or L-3)
Max.amount of glow lamps	230V,max.75pcs(Measured with glow lamp 0.68mA/230V AC)
Temperature coefficient	0.05%/°C,at=20°C(0.05%/°F, at=68°F)
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 ⁵
Reset time	max.200ms
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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	EN61812-1,IEC 60669-2-3,IEC60947-5-1

Functions Diagram



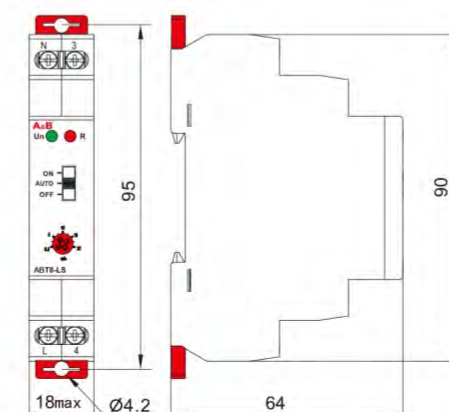
Wiring Diagram



Types of lamps

2000W	2000W	1000W	900W(125uF)	400W	300W

Dimensions(mm)



Example





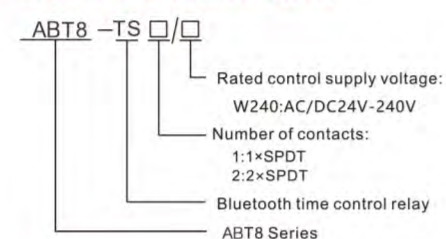
Applications

-Bluetooth time control relay can be used for industrial equipment, lighting control, heating element control, motor and fan control, and regularly turn on and off loads.

Feature

- The relay is set through Bluetooth connection of mobile phone app, which is simple and easy to operate.
- 8 / 16 group timing setting.
- It has two working modes: automatic and manual.
- It has AC / DC 24v-240v ultra wide working voltage.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

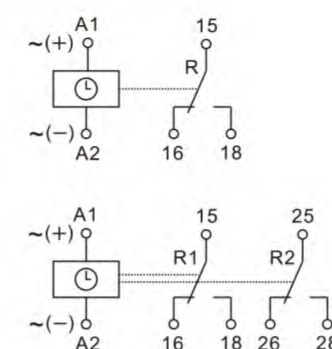
Model and connotation



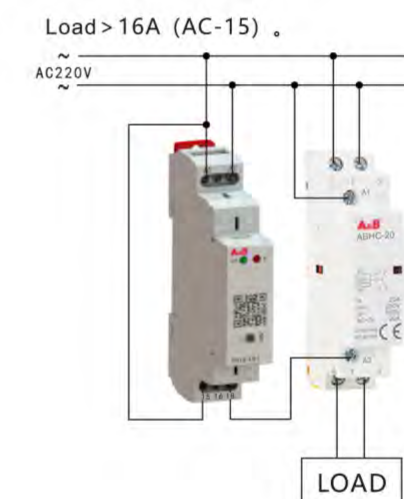
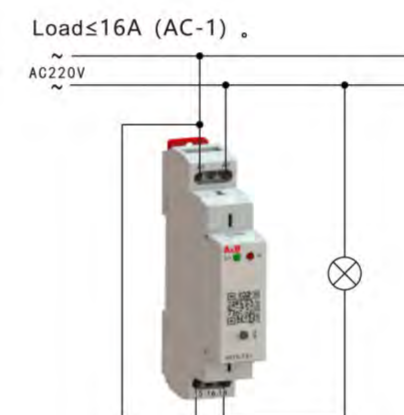
Technical parameters

	ABT8-TS1	ABT8-TS2
Function	Bluetooth time control relay	
Supply terminals	A1-A2	
Voltage range	AC/DC 24-240V 50Hz	
Burden	AC 0.09-3VA/DC 0.05-1.7W	
Supply voltage tolerance	-15%;+10%	
Supply indication	green LED	
Number of timers	8-ON/8-OFF	2x8-ON/2x8-OFF
Time setting	APP(Bluetooth connectivity)	
Time deviation	±2s/day	
Output	1xSPDT	2xSPDT
Min.breaking capacity DC	16A/AC1	500mW
Output indication	red LED	
Mechanical life	1x10 ⁷	
Electrical life(AC1)	1x10 ⁵	
Operating temperature	-20°C ~ +55°C	
Storage temperature	-35°C ~ +75°C	
Mounting/DIN rail	Din rail EN/IEC 60715	
Protection degree	IP20	
Operating position	any	
Overvoltage category	III.	
Pollution degree	2	
Max.cable size(mm ²)	1x2.5mm ² 或 2x1.5mm ² 0.4N-m	
Dimensions	90mmx18mmx64mm	
Weight	W240-62g,A230-60g	W240-82g,A230-81g
Standards	GB/T14048.5,IEC60947-5-1,EN 61812-1	

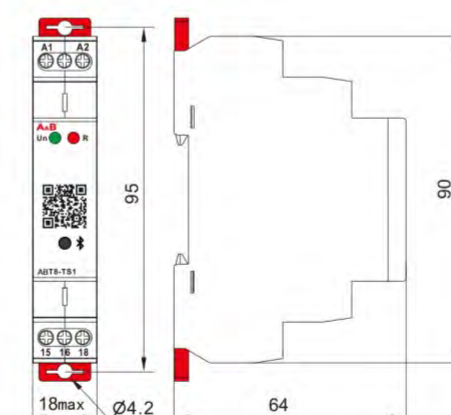
Wiring Diagram



Example



Dimensions(mm)





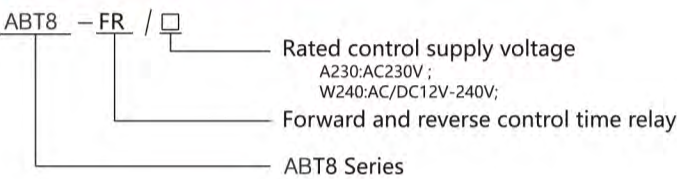
Applications

-The forward and reverse control time relay can be used to control the forward and reverse rotation of the motor.

Feature

- You can individually set the forward, stop, and reverse times.
- With a forced stop function, it can be pressed to stop forward or reverse rotation at any time.
- Ultra wide delay range, 0.1 seconds - 99 days can be set.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

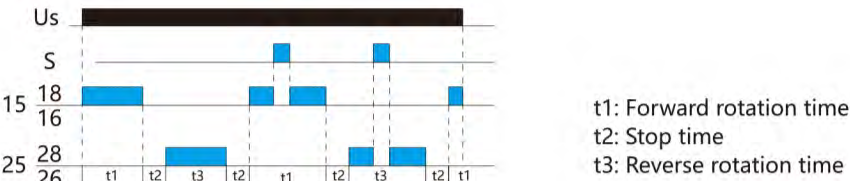
Model and connotation



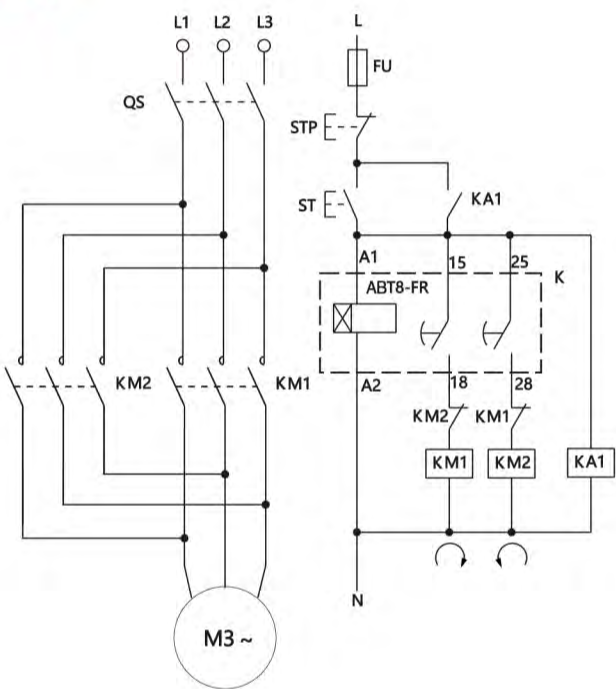
Technical parameters

		ABT8-FR
Function		Forward and reverse control time relay
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%
Time ranges		0.1s-99day,ON,OFF
Time setting		Key setting
Time deviation		≤1%
Repeat accuracy		0.2%-set value stability
Temperature coefficient		0.05%/°C,at=20°C
Output		2×SPDT
Current rating		2×16A(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°C to+55°C
Storage temperature		-35°C to+75°C
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,A230-81g
Standards		EN 61812-1,IEC60947-5-1

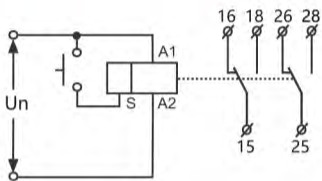
Function



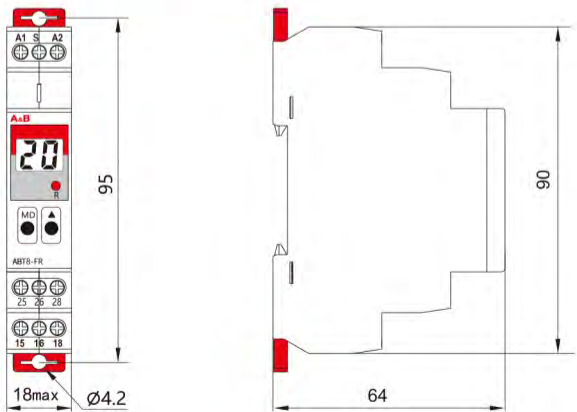
Example



Wiring Diagram



Dimensions(mm)





Applications

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

Feature

- 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

ABV8 - ☐ / ☐

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

Fuction mode

01:Over/Under voltage

02:Overvoltage and Undervoltage

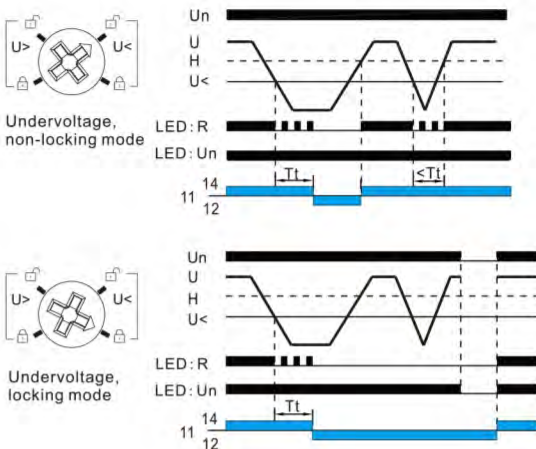
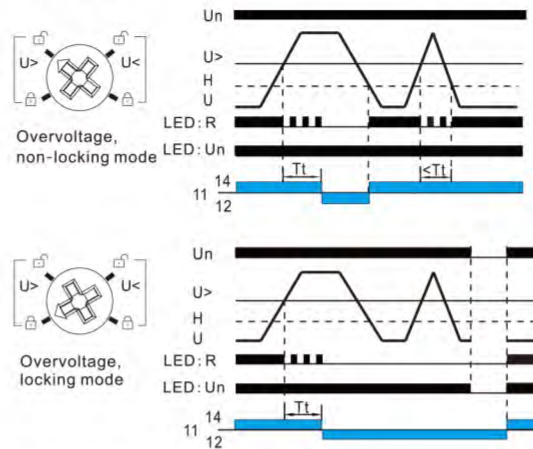
ABV8 Series

Technical parameters

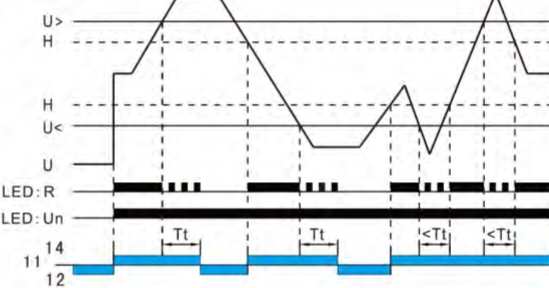
	ABV8-01	ABV8-02
Function	Monitoring voltage	
Supply terminals	A1-A2	
Rated supply voltage	DC12V,AC/DC24V-48V,AC/DC110V-240V,AC220V	
Rated supply frequency	45Hz-65Hz,0	
Hysteresis	5%-20%	3%fixed
Supply indication	green LED	
Time delay	Adjustable 0.1s-10s,10%	
Measurement error	≤1%	
Run up delay at power up	0.5s time delay	
Konb setting accuracy	10% of scale value	
Reset time	1000ms	
Temperature coefficient	0.05%/°C,at=20°C(0.05°F, at=68°F)	
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 ⁵	
Operating temperature	-20°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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	EN 60255-1,IEC60947-5-1	

Functions Diagram

ABV8-01

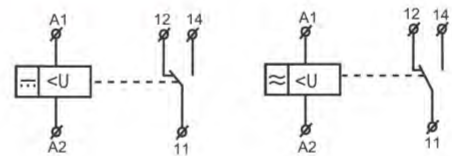


GRV8-02

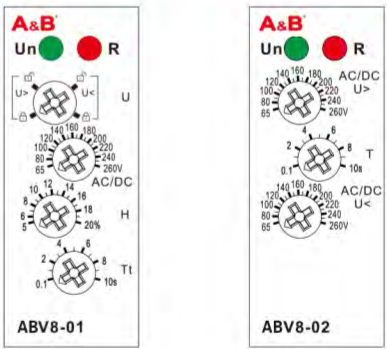


U> :Overvoltage threshold
U< :Undervoltage threshold
H :Hysteresis
U :Controlled signal
Tt :Delay on threshold crossing

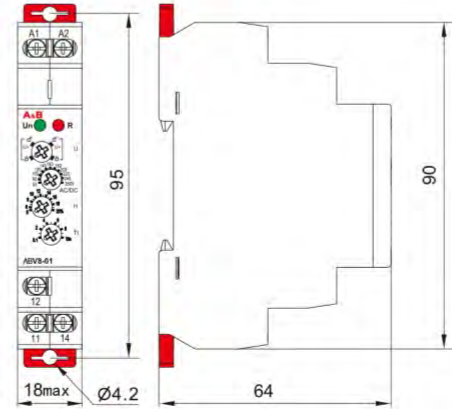
Wiring Diagram



Panel Diagram



Dimensions(mm)





Applications

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

Feature

- 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

ABV8 - ☐ / ☐

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

Fuction mode

01:Over/Under voltage

02:Overvoltage and Undervoltage

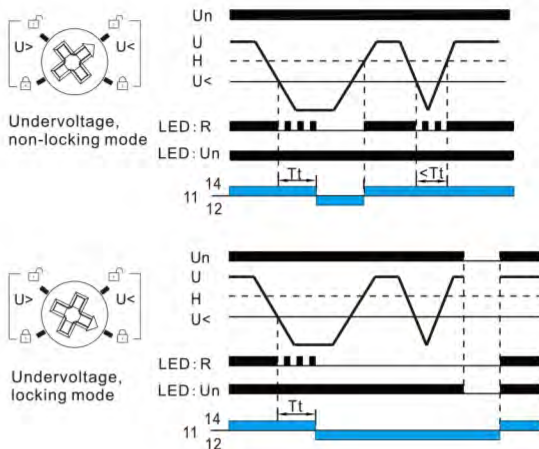
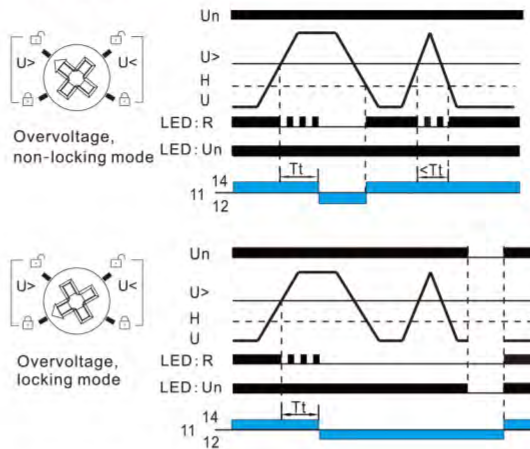
ABV8 Series

Technical parameters

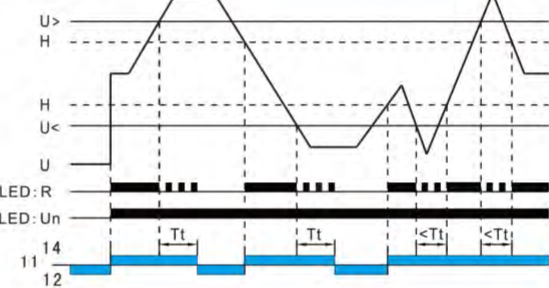
	ABV8-01	ABV8-02
Function	Monitoring voltage	
Supply terminals	A1-A2	
Rated supply voltage	DC12V,AC/DC24V-48V,AC/DC110V-240V,AC220V	
Rated supply frequency	45Hz-65Hz,0	
Hysteresis	5%-20%	3%fixed
Supply indication	green LED	
Time delay	Adjustable 0.1s-10s,10%	
Measurement error	≤1%	
Run up delay at power up	0.5s time delay	
Konb setting accuracy	10% of scale value	
Reset time	1000ms	
Temperature coefficient	0.05%/°C,at=20°C(0.05°F, at=68°F)	
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 ⁵	
Operating temperature	-20°C to +55°C (-4°F to 131°F)	
Storage temperature	-35°C to +75°C (-22°F to 158°F)	
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	EN 60255-1,IEC60947-5-1	

Functions Diagram

ABV8-01

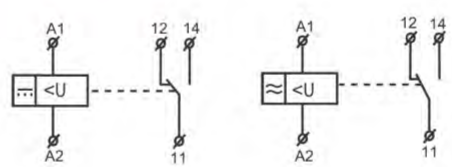


GRV8-02

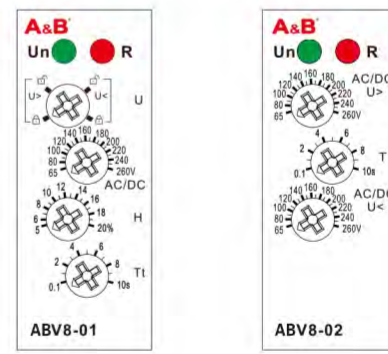


U> :Overvoltage threshold
U< :Undervoltage threshold
H :Hysteresis
U :Controlled signal
Tt :Delay on threshold crossing

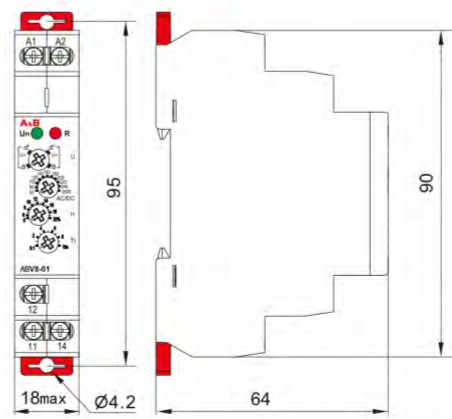
Wiring Diagram



Panel Diagram



Dimensions(mm)





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).

Feature

- 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%.
- 2 C/O output.
- Relay status is indicated by LED.
- 1-MODULE, DIN rail mounting.

Model and connotation

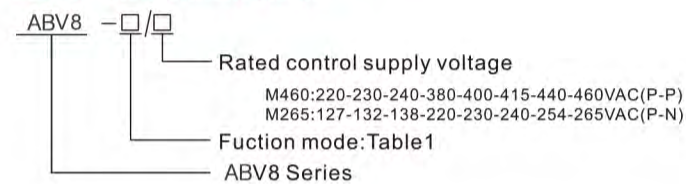


Table 1

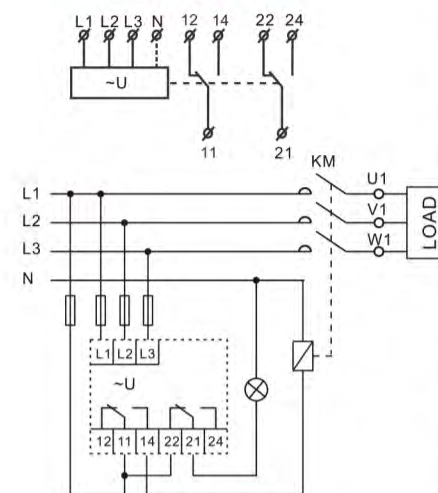
Function code	Over-voltage	Under-voltage	Asymmetry	Delay time	Phase sequence	Phase failure
03D	—	—	—	—	●	●
04D	2%...20%	-20%...2%	—	0.1s...10s	●	●
05D	2%...20%	-20%...2%	8%	0.1s...10s	●	●
06D	2%...20%	-20%...2%	5%...15%	2s	●	●
07D	—	—	5%...15%	0.1s...10s	●	●
08D	15%	-15%	8%	2s	●	●

Note:●the function is available

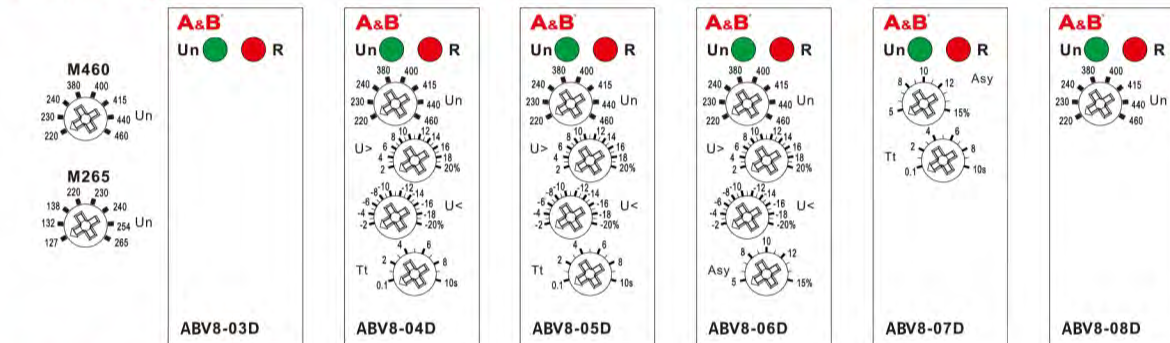
Technical parameters

	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	10% of scale value	
Reset time	1000ms	
Temperature coefficient	0.05%/°C,at=20°C(0.05%/°F, at=68°F)	
Output	2×SPDT	
Current rating	8A/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	

Wiring Diagram

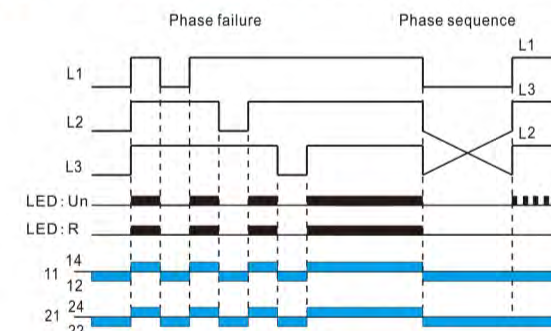


Panel Diagram

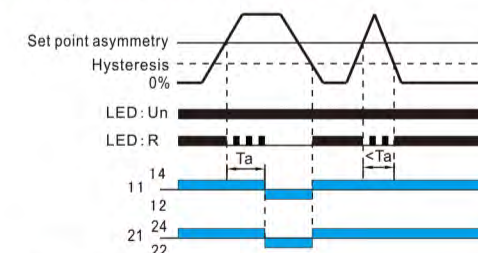


Functions Diagram

- Phase failure and phase sequence function diagram

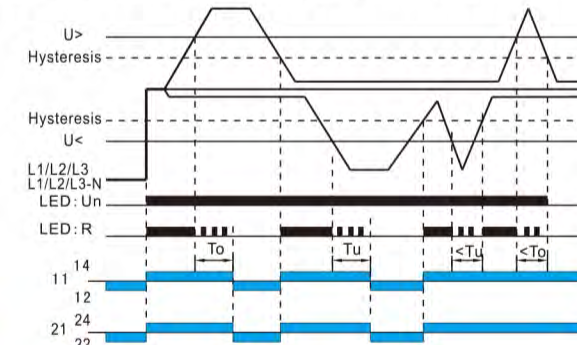


●Asymmetry function diagram

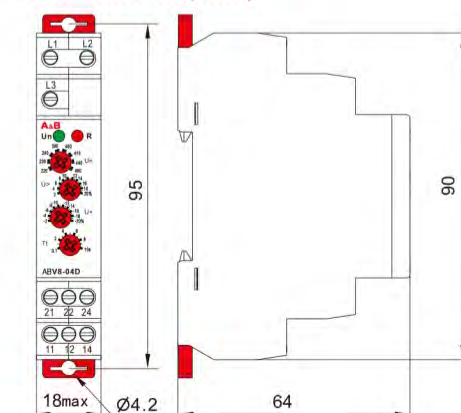


To: Overvoltage threshold tripping delay.
Tu: Undervoltage threshold tripping delay.
Ta: Asymmetry threshold tripping delay.

●Overvoltage and undervoltage function diagram



Dimensions(mm)



3-Phase voltage relay



Applications

- Control for connection of moving equipment(site equipment,agricultural equipment,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).

Feature

- Controls its own supply voltage(True RMS measurement).
- Set 8-level rated operating voltage through knob.
- Set the reset delay time through the knob.
- 2 C/O output .
- Measuring frequency range:45Hz-65Hz.
- Voltage measurement accuracy<1%.
- Relay status is indicated by LED.
- 2-MODULE,DIN rail mounting.

Model and connotation

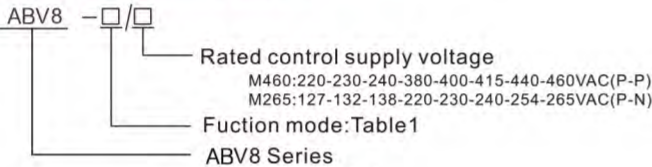


Table 1

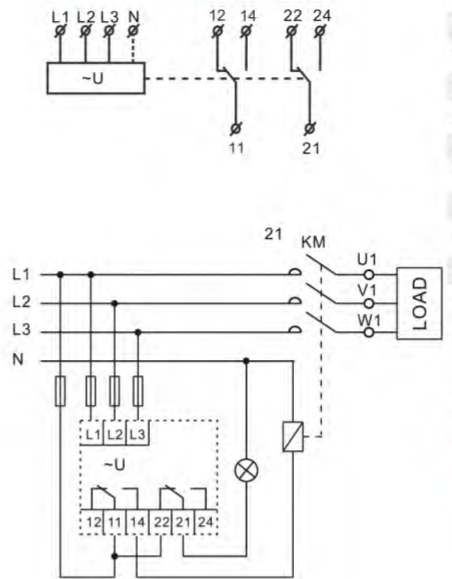
Function code	Over-voltage	Under-voltage	Asymmetry	Delay time	Phase sequence	Phase failure	Reset time
09			8%		●	●	
10	2%...20%	-20%...2%	5%...15%	0.1s...10s	●	●	0.1s...10s

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	Adjustable 0.1s-10s, 10%	
Konb setting accuracy	10% of scale value	
Reset time	Adjustable 0.1s-10s, 10%	
Temperature coefficient	0.05%/°C, at=20°C(0.05%/°F, at=68°F)	
Output	2×SPDT	
Current rating	8A/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	

Wiring Diagram



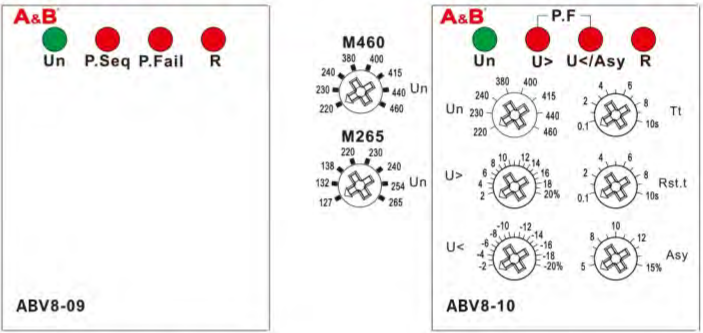
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
Mounting/DIN rail	Din rail EN/IEC 60715
Protection degree	IP40 for front panel/IP20 terminals
Operating position	any
Overvoltage category	III.
Pollution degree	2
Max.cable size(mm ²)	solid wire max.1×2.5or 2×1.5/with sleeve max.1×2.5(AWG 12)
Dimensions	90×36×64mm
Weight	80g
Standards	EN 60255-1, IEC60947-5-1

Note:

$$Asy = \frac{U_{max} - U_{min}}{U_{avr}} \times 100\%$$
$$U_{avr} = \frac{U_1 + U_2 + U_3}{3}$$

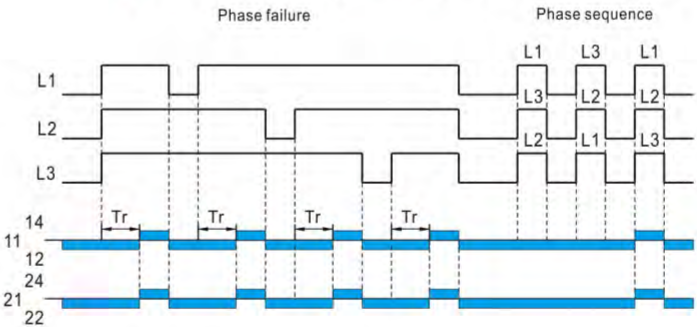
$U_{max} = \max(U_1, U_2, U_3)$
 $U_{min} = \min(U_1, U_2, U_3)$

Panel Diagram

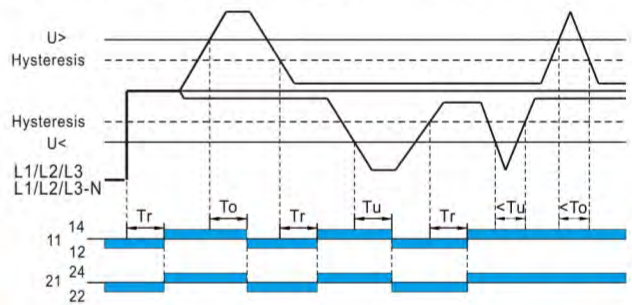


Functions Diagram

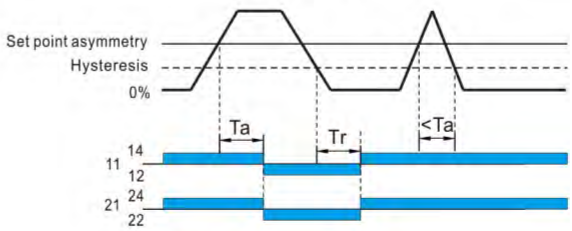
●Phase failure and phase equence function diagram



●Overvoltage and undervoltage function diagram

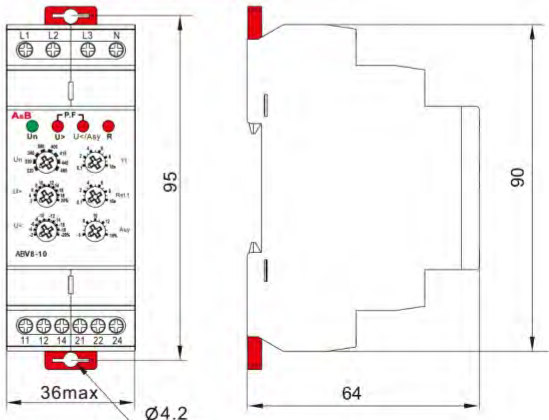


●Asymmetry function diagram



To:Overvoltage threshold tripping delay.
Tu:Undervoltage threshold tripping delay.
Ta:Asymmetry threshold tripping delay.
Tr:Power up delay

Dimensions(mm)





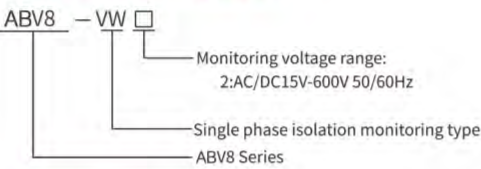
Applications

- Used for overvoltage and undervoltage protection of electrical equipment.
- Monitor weak load carrying capacity or voltage signals that require isolation.
- Normal/emergency power switch.
- Prevent phase failure of dynamic loads.

Feature

- True RMS measurement with high measurement accuracy.
- Overvoltage and undervoltage selection monitoring or simultaneous monitoring.
- The output contact is normally open or normally closed and can be set.
- Two sets of contact outputs, which can act separately and independently.
- 36mm wide, 35mm clamp rail installation.

Model and connotation

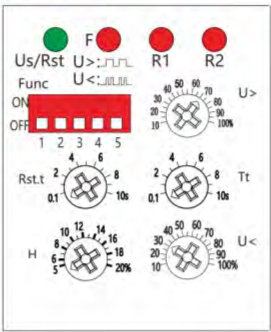


Technical parameters

	ABV8-VW2
Function	Monitoring voltage
Supply terminals	A1,A2
Rated supply voltage	AC/DC24-240V 50/60Hz
Monitoring voltage input terminal	V1,V2,V3,C
Monitoring voltage range	AC/DC15V-600V 50/60Hz
Rated insulation voltage	600V
Hysteresis	Only over or under:5%-20%adjustable;Over and under:fixed 3%
Supply/Reset indication	Green LED
Measurement error	≤2%
Time delay	0.1s-10s
Power up delay/Reset time	0.1s-10s
Konb setting accuracy	10%
Output	2×SPDT
Current rating	5A/AC1
Switching voltage	250VAC/24VDC
Min.breaking capacity DC	500mW
Output indication	Red LED
Mechanical life	5×10 ⁶
Electrical life(AC1)	5×10 ⁴
Operating temperature	-20°C to +55°C (-4°F to 131°F)
Storage temperature	-35°C to +75°C (-22°F to 158°F)
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(mm²)	solid wire max.1×2.5or 2×1.5(with sleeve max.1×2.5(AWG 12)
Dimensions	90mm×36mm×70mm
Weight	100g
Standards	GB/T14048.5,IEC60947-5-1

Input terminal	Input monitoring voltage range	Input resistance
V1-C	AC/DC15V-150V 50/60Hz	500kΩ
V2-C	AC/DC30V-300V 50/60Hz	1MΩ
V3-C	AC/DC60V-600V 50/60Hz	2MΩ

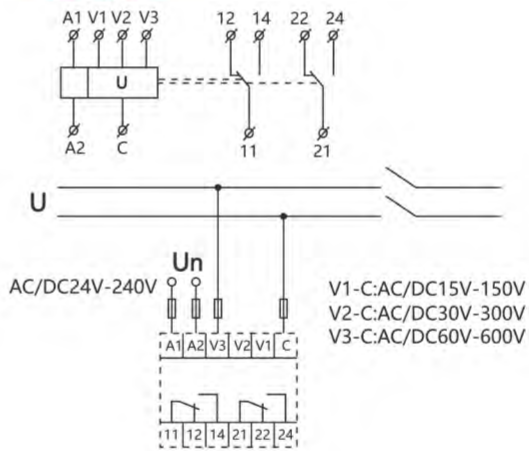
Panel Diagram



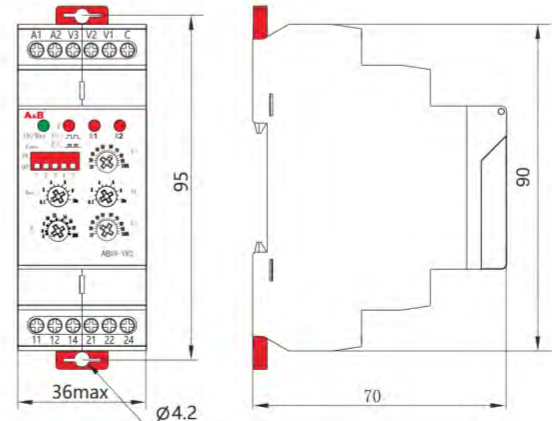
Switch Settings

SW1	ON	Over or under
	OFF	Over and under
SW2	ON	Only over (Valid when SW1=ON)
	OFF	Only under (Valid when SW1=ON)
SW3	ON	Locked after over/under protect
	OFF	Auto-reset after over/under protect
SW4	ON	11-14/21-14 Normal closed
	OFF	11-14/21-14 Normal open
SW5	ON	Relay 1 and relay 2 operate simultaneously (This mode is defaulted when SW1=ON)
	OFF	Relay 1 and relay 2 operate separately Valid when SW1=OFF, R1(11,12,14)-Over, R2(21,22,24)-Under

Wiring Diagram



Dimensions(mm)



Current monitoring relay

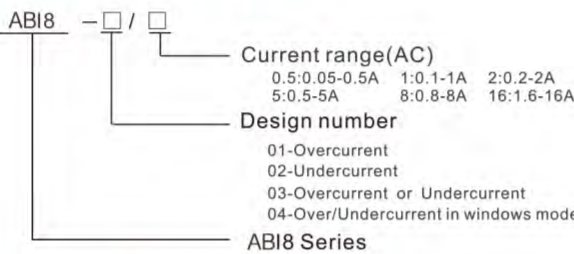
Applications

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

Feature

- Adjustable delay 0.1 - 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
- Power up delay.
- Possible to use for current scanning from current transformer.
- Universal supply AC/DC 24 - 240 V.
- Relay status is indicated by LED.
- 1-MODULE,DIN rail mounting.

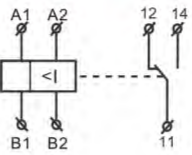
Model and connotation



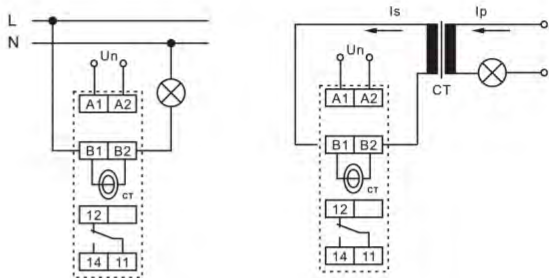
Technical parameters

	ABI8-01	ABI8-02	ABI8-03	ABI8-04		
Function	Over current	Under current	Over Under current	Over/Under current		
Supply terminals	A1-A2					
Rated supply voltage	AC/DC 24V-240V					
Rated supply frequency	50/60Hz,0					
Burden	max 25VA					
Supply voltage tolerance	-15%;+10%					
Current range	0.05A-0.5A	0.1A-1A	0.2A-2A	0.5A-5A	0.8A-8A	1.6A-16A
Current frequency	AC 50Hz					
Max.operating current	1A	2A	5A	8A	12A	22A
Current adjustment	potentiometer					
Time delay	adjustable 0.1-10 s					
Power up delay	adjustable 0.1-10 s					
Supply indication	green LED					
Setting accuracy	10 %					
Repeat accuracy	<1 %					
Temperature dependancy	<0.1 % /°C					
Limit values tolerance	5 % (10% for 0.05-0.5A range)					
Hysteresis	5 %					
Temperature coefficient	0.05%/°C,at=20°C(0.05%°F, at=68°F)					
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 ⁵					
Operating temperature	-20°C to +55°C (-4°F to 131°F)					
Storage temperature	-35°C to +75°C (-22°F to 158°F)					
Mounting/DIN rail	Din rail EN/IEC 60715					
Protection degree	IP40 for front panel/IP20 terminals					
Operating position	any					
Overvoltage cathegory	III.					

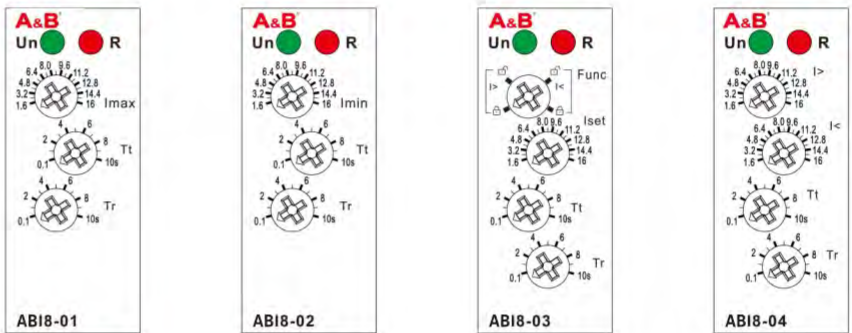
Wiring Diagram



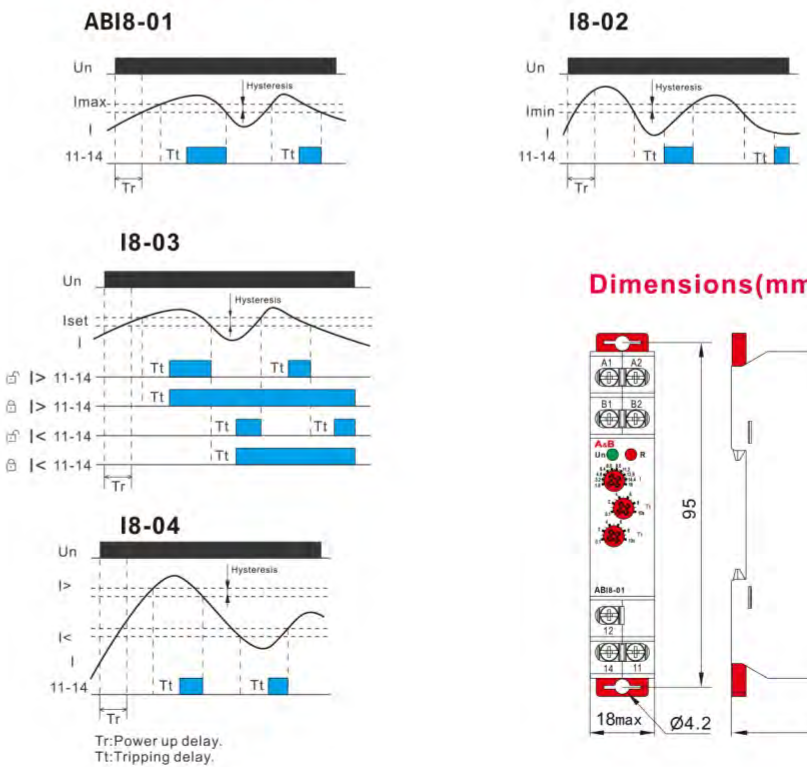
Pollution degree	2
Max.cable size(mm ²)	solid wire max.1×2.5or 2×1.5/with sleeve max.1×2.5(AWG 12)
Dimensions	90×18×64mm
Weight	62g
Standards	EN 60255-1



Panel Diagram



Functions Diagram



Dimensions(mm)

