

To All Customers

Rep No.B14036

December 10, 2014

Fuji Electric FA Components & Systems CO., Ltd.

Business Planning Division Business Operations Department

## Protective Relay QHA Series

### Notice of Changing a Part of Specification for Undervoltage Relay

We would like to thank you for your continued patronage of Fuji products.

We will be changing some products as described below.

Please review the following information and take appropriate actions.

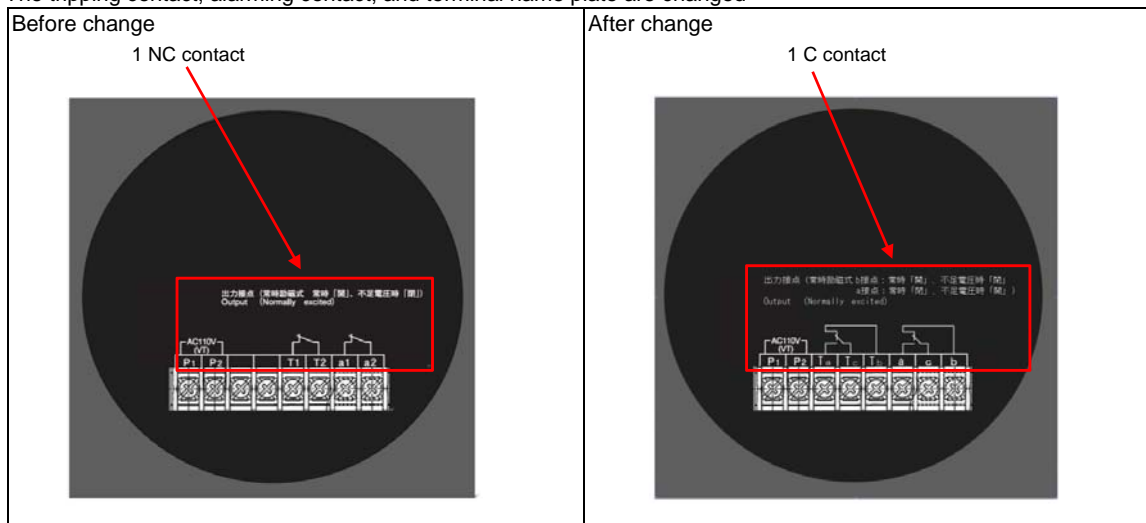
Please inform all related sections of your company.

Product names	Undervoltage relay
Series and series name	QHA Series
Types	QHA-UV1
Changed parts	The output contact specification is changed
Details of the change	The tripping contact and alarming contact are changed from NC contact to C contact. * For changes details, see "QHA-UV1 Change Details".
Reason for change	For improving operability
Date of production change	Changed products scheduled to be produced from February 2015.
Attachments	Attachment 1: "QHA-UV1 Change Details" Attachment 2: "Specifications and Outline Drawing"
Notes concerning the change	Please note that the terminal numbers of the wiring have been changed. This change does not have any effect on the output contact capacity and external and mounting dimensions of the product.

## QHA-UV1 Change Details

### <Change of appearance>

The tripping contact, alarming contact, and terminal name plate are changed



### <Comparing examples of tripping contact and alarming contact>

Example: Circuit when turning ON the switch again after the recovery of this product (automatic recovery)

Before change	After change
<p>Since 27 NC contact opens after the recovery, it is impossible to activate the closing coil (CC). Therefore, it is necessary to add a separate voltage relay and use its NO contact to turn ON the switch during recovery.</p> <p>Closing control      Open control      Alarm contact</p> <p>Since the contact opens after the recovery, it is impossible to activate the closing coil.</p>	<p>It is possible to turn ON the circuit breaker again by activating the auxiliary relay (AXR) at NO contact (a-c) of the alarm contact QHA-UV1 and connecting NO contact to the closing control circuit.</p> <p>Closing control      Open control circuit      Alarm contact (27)</p>
<p>1) As the power supply voltage drops, the undervoltage relay (27) starts to work.</p> <p>2) NC contact (27b) of undervoltage relay (27) is turned ON and the trip coil (TC) is activated to turn OFF the switch.</p> <p>3) NC contact (27b) of alarm contact is closed.</p> <p>4) When the power supply voltage is recovered, the undervoltage relay (27) works to open the alarm contact 27b.</p> <p>Therefore, it is impossible to output the turn-on signal to the closing coil (CC).</p> <p>So, it is necessary to create a circuit that uses the voltage relay (59 or 84) separately for detecting the recovery of the power supply voltage and turns ON the closing control circuit using the NO contact of the voltage relay.</p> <p>* 59: AC overvoltage relay, 84: voltage relay</p>	<p>1) As the power supply voltage drops, the undervoltage relay QHA-UV1 (27) starts to work.</p> <p>2) NC contact (27b) of undervoltage relay (27) is turned ON and the trip coil (TC) is activated to turn OFF the switch.</p> <p>3) When the power supply voltage is recovered, NO contact (27a) is turned ON in the relay circuit to activate AXR in the relay circuit.</p> <p>4) When AXR is activated, NO contact of AXR is turned ON and the closing coil (CC) starts to work to turn ON the switch.</p>

Note: The circuit above is simplified in order to give a clear explanation. When using the example as a reference, take care with regards to the power supply, interlock, and others.

# Specifications of overvoltage and undervoltage protective relays

Description			Overvoltage relay		Undervoltage relay		
Type			QHA-OV1		QHA-UV1		
Tripping system			DC shunt trip				
Rated voltage			110V AC				
Rated frequency			50/60 (Hz)				
Setting	Voltage	*2	115-120-125-130-135-140 -145-150 (V) -Lock[L]		60-65-70-75-80-85-90-95 -100 (V) -Lock[L]		
	Time	*2	0.1-0.2-0.5-1-1.5-2-2.5-3-4-5-6-8-10(s)				
Characteris- tics	Accuracy of actuated voltage		Within $\pm 5\%$ of setting voltage				
	Accuracy of actuated time		0.1~0.5s : Within 50ms 1~10s : Within $\pm 5\%$ of setting time				
	Reset voltage		95% or more of setting voltage		105% or less of setting voltage		
Indicator	Run		Green-LED lamp				
	Start		Red-LED lamp				
	Operation		Magnetic reversal type (Orange) - manual reset				
	7-segment LED indication: Red	Start	*3	00			
		Ratio of elapsed time	*3	10-20-30-40-50-60-70-80-90 (%)			
		Voltage	*4	75~160 (V) , 160 (V) over"---"		55~130 (V) , 130 (V) over" --- "	
		Setting value	*5	Setting voltage, Setting time			
		Setting frequency	*1,*2	50, 60 (Hz)			
		Reset system	*1,*2	0 : Automatic, 1 : Manual			
		Test		O P : It indicates that it is a selective state of compulsive operation.			
		Self-checking		C H : Start of self-checking , g o : Normal Error code indication if it becomes abnormal			
		Record		Automatic display about the operating voltage up to the past 5 times.			
		Lights out		Indicator is off			
Reset system	Output contacts	Automatic reset	At the voltage less than a setting voltage.		At the voltage more than a setting voltage.		
		Manual reset	Reset by reset lever operation				
	Operation indicator		Manual reset : Reset by reset lever operation				
Output contacts			Trip: 1 NO, Alarm: 1 NO		Trip: 1 NC, Alarm: 1 NC "Normally excited type, Undervoltage/power failure : ON"		
Contact rating	Trip	(QHA-OV1:T <sub>1</sub> , T <sub>2</sub> ) (QHA-UV1:Ta, Tb, Tc)	Make : 100V DC · 15A (L/R=0ms) 220V DC · 10A (L/R=0ms)		Break : 100V DC · 0.25A (L/R=7ms) 220V AC · 2.2A (cos $\phi$ =0.4)		
	Alarm *6	(QHA-OV1:a <sub>1</sub> , a <sub>2</sub> ) (QHA-UV1:a, b, c)	Make : 100V DC · 15A (L/R=0ms) 220V DC · 10A (L/R=0ms)		Break : 30V DC · 2A (max. 125V DC · 0.2A) (L/R=7ms) 125V AC · 3A (max. 250V AC · 2A) (cos $\phi$ =0.4)		
Power failure compensation operating time			—		10 (s)		
Consumption		Run	2VA		4VA		
		Operation	3VA		3VA		
Operating temperature range			-20 to +50℃(no icing or no condensation) Max. operating temperature : +60℃				
Standard			J E C - 2 5 1 1				
Test button			Built-in (For compulsive operation)				
Outline drawing			F 8 1 0 0 3 3 8 (4)				
Mass			1 kg				

	DATE	NAME	APPROVED	Fuji Electric FA Components & Systems Co., Ltd.		1
DRAWN	2014-11-10	T. KOKUBUN	同本			2
CHECKED						
REVISIONS						
			FIN85 74 87 FIN85 70 247	DWGNO.	F I N 8 5 7 0 2 6 7	a

This material and the information herein is the property of Fuji Electric FA Components & Systems Co., Ltd.. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party, nor used for the manufacturing purposes without the express written consent of Fuji Electric FA Components & Systems Co., Ltd..


Changed 2014-11-10 T.KOKUBUN

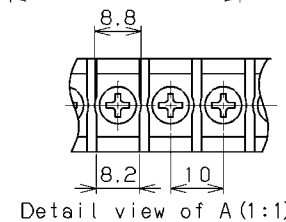
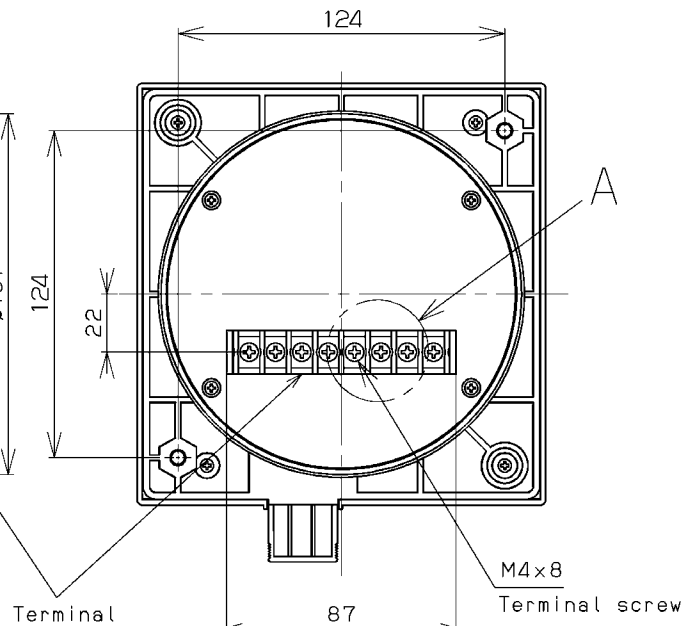
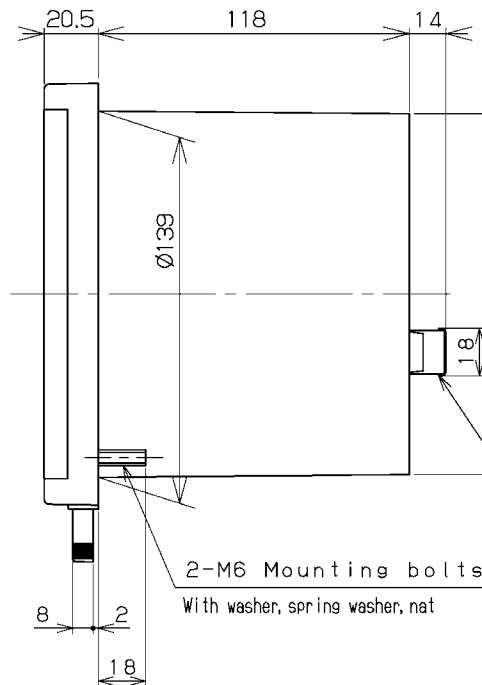
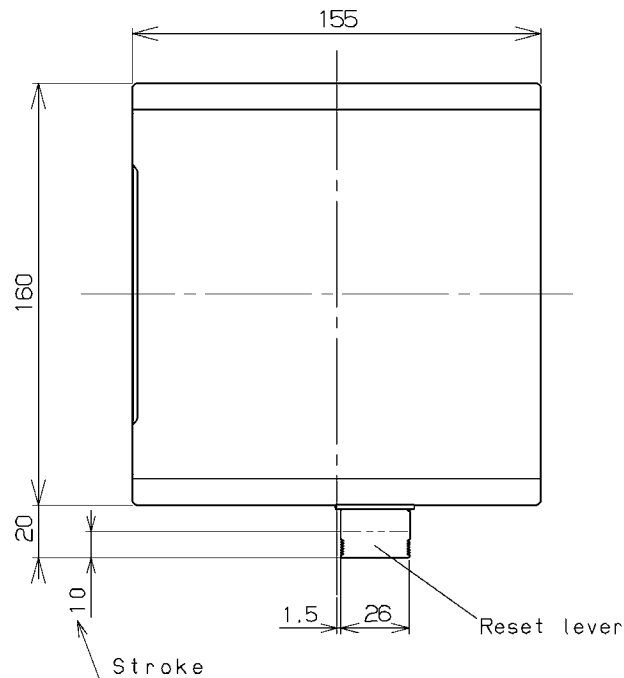
This material and the information herein is the property of Fuji Electric FA Components & Systems Co., Ltd. They shall be neither reproduced, copied, lent, or disclosed in any way whatsoever for the use of any third party, nor used for the manufacturing purposes without the express written consent of Fuji Electric FA Components & Systems Co., Ltd.

- \* 1) Set it by "FUNCTION SWITCH".
- \* 2) It is displayed approx. 2 seconds when "FUNCTION SWITCH", "VOLTAGE(V)" or "TIME(s)" is set.
- \* 3) It is displayed when the indicator selection switch is set to "ELAPSED TIME(%)".
- \* 4) It is displayed when the indicator selection switch is set to "VOLTAGE(V)".  
Accuracy of the indication is  $\pm 5\%$  (FS).
- \* 5) It is displayed when the indicator selection switch is set to "VOLTAGE SET(V)" or "TIME SET(s)".
- \* 6) The alarm contact will be reset in the following conditions.
  - i) The control power supply is shut off after the voltage relay is actuated. (Automatic reset, Manual reset.)  
QHA-OV1 : The alarm contact is reset automatically after about 150ms which a voltage relay is actuated.  
QHA-UV1 : The closed condition of the alarm contact is maintained.
  - ii) The control power supply is continuous supply after the voltage relay is actuated. (Automatic reset)  
The alarm contact is reset automatically after about 200ms which a voltage relay is actuated.
  - iii) The control power supply is continuous supply after the voltage relay is actuated. (Manual reset)  
The closed condition of the alarm contact is maintained.

(a) Changed 2014-11-10 T.KOKUBUN

REVISIONS

	DATE	NAME	APPROVED	Fuji Electric FA Components & Systems Co., Ltd.		
DRAWN	2014-11-10	T. KOKUBUN			FIN85 74 87 FIN85 70 247	2 2
CHECKED						
				DWGNO.	F I N 8 5 7 0 2 6 7	a



External wiring diagram

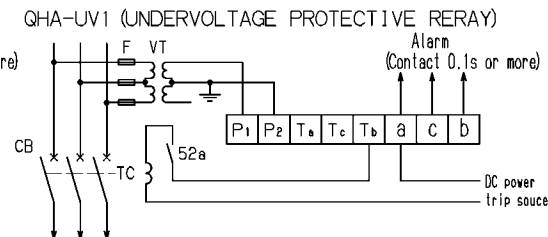
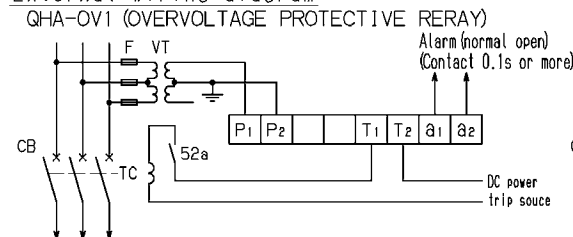
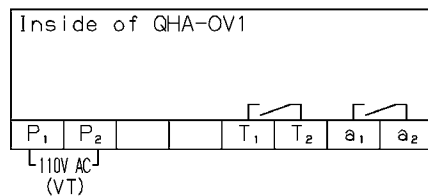
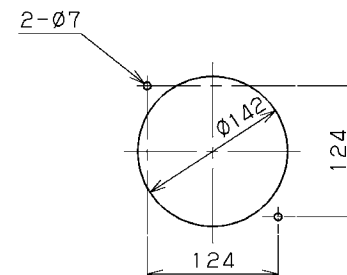
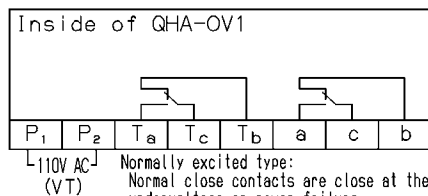


Figure of terminal sequence

QHA-OV1



QHA-UV1



Panel cutting (1:5)  
(View from the front)

Type	QHA-OV1	QHA-UV1
Tripping system	DC shunt trip	
Rated current	110V AC	
Rated frequency	50/60Hz	
Standard	JEC-2511	
Mass	1kg	

REVISEMENTS	①Changed 2014-11-10 T. KOKUBUN		DATE	NAME	APPROVED	SCALE	1 : 2	TITLE	OUTLINE DRAWING FOR FUJI OVERVOLTAGE AND UNDERVOLTAGE PROTECTIVE RELAYS QHA-OV1、QHA-UV1	DRAWING NO.	F810 03 38 (4)	a
	DRAWN	2014-11-10	T. KOKUBUN									
	CHECKED			Y. Okamoto								
	Fuji Electric FA Components & Systems Co., Ltd.											
Ref.	F810 03 33 (4) . F810 03 17 (4)											