

TRIPPING CIRCUIT SUPERVISION RELAY **KIT-11**

inside of the module HX1, system Combiflex

CONTENT.....	1
ORDERING CODE, PRICE	2
APPLICATION.....	3
FEATURES and PROPERTIES	3
DESCRIPTION of OPERATION.....	4
TECHNICAL DATA	5
CONNECTION DIAGRAMS	6
DIMENSIONS	7

Place and date of issue: Medvode, 26. 09. 2014

The producer reserves the right to modify data and design in the light of future progress.

ORDERING CODE, PRICE

Note:

Bellow listed Prices are subjected to influence of payment conditions and the delivery request. Price does not include tax.

Ordering Code	Nominal Voltage	@quantity (peaces/order)	Price (€ /pcs)
KIT-11	$U_{aux} = 220V$ or 110V defined by the reconnection of pin (18 or 14)	1 - 2	199
		3 - 9	187
		10 - 19	178
		20 - 49	170
		50 - 99	164
		100 <	159

Place and date of issue: Medvode, 22. 11. 2013

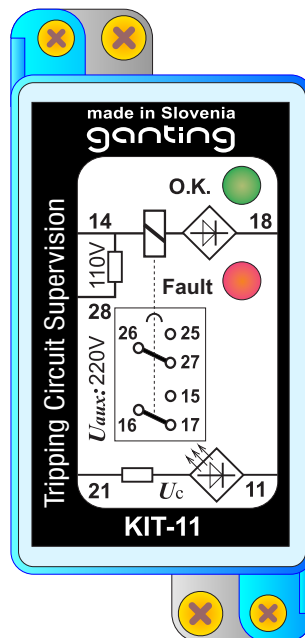


APPLICATION, FEATURES AND PROPERTIES

APPLICATION

KIT-11 is intended for continuous supervision of all vital parts of the circuit breaker's tripping coil loop. This monitoring includes:

- loss of auxiliary voltage;
- interruption of the electromagnet's trip coil;
- interruption or bad contact in installation;
- the mistake in relay KIT 11 itself














FEATURES and PROPERTIES

- Unsenitive to polatity of connection for Control Input Voltage U_c or for Auxiliary supply Voltage U_{aux} ;
- Alarm is delayed for 3s, after U_c or U_{aux} vanishing;
- Announce the disappearance of Control Voltage when U_c is under the level of 25V;
- Compact design in New Combiflex System, size Hx1;
- Line control Current under 2mA;
- The same module for nominal Auxiliary Voltage 110V or for 220V;
- Wide range of active (O.K.) Control Voltage U_c ; = (60 to 264)V.

DESCRIPTION of OPERATION

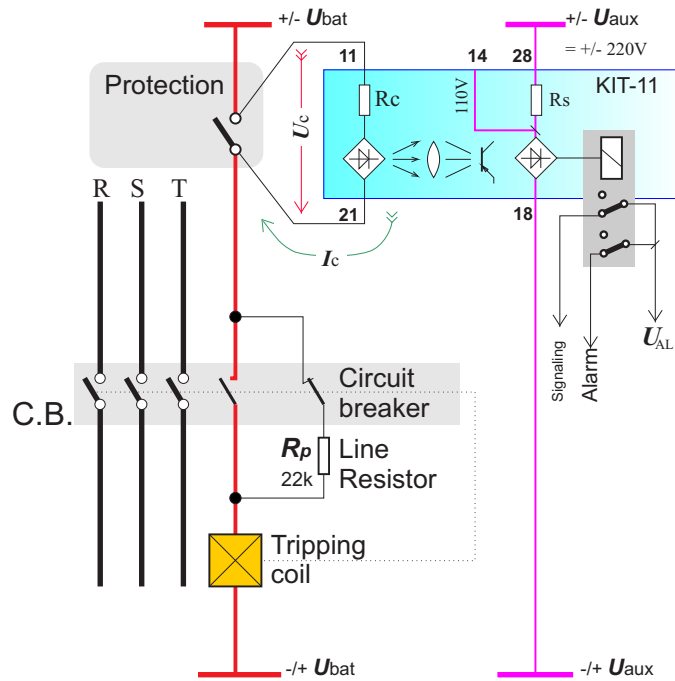
TRIPPING CIRCUIT SUPERVISION RELAY - **KIT 11** contains two galvanically separated circuits, the supervision-measuring link and the supply circuit. The supervision-measuring circuit provides a control current of 2 mA to observe the ability of tripping circuit in both position of circuit breaker ($I_c = 2,4$ or $1,9\text{mA}$; at $U_c = 220\text{V}$). The range of operating voltage for control link is $U_c = (60 \text{ to } 264)\text{V}$. The control current operates the LED of photo coupler. The control current level, greater then $I_c > 0,4\text{mA}$, is considered as O.K. state. The fault state is detected, if $I_c < 0,25\text{mA}$. Mentioned fault detection triggers count down 3s delay, before alarm is activated.

<p>O.K. </p> <p>Fault </p>	<p>When the green LED lits, indicating the O.K.-state. The output relay is ON.</p>
<p>O.K. </p> <p>Fault </p> <p>O.K.  </p> <p>Fault   </p> <p>transient in 10s</p>	<p>Red LED indicates the Fault state, meaning that the tolerance delay time run out. The output relay drop out. Alarm is provided by breac contact. This fault state could have two reasons:</p> <ol style="list-style-type: none"> 1. interruption of current in control circuitn (pin 11 - 21): <ol style="list-style-type: none"> 1.1. disappearace of voltage $U_c = 0$ across terminals (11 - 21); 1.2. Trip contact of protection is permanently closed; 1.3. Interruption of instalation from $+ U_{bat}$ to $- U_{bat}$; 1.4. Interrupted wires in connection of control circuit between terminals (11 - 21); 1.5. Interrupted coil for tripping; 1.6. Interruption in line or line resistor $R_p = 22\text{k}/5\text{W}$. <p>Red LED in transition extinguishing time about 10 seconds:</p> <ol style="list-style-type: none"> 2.1. Interruption of auxiliary supply - terminals (18 - 28); <p>The loss of auxiliary voltage will be alarmed after time delay count out. Red light indication is providrd from capacitor storage for next 10s.</p>
<p>O.K. </p> <p>Fault </p>	<p>When both LEDs are OFF, it can mean either:</p> <ol style="list-style-type: none"> 3.1. that the auxiliary voltage for KIT11 vanished before more than 30 seconds ago; or 3.2. trere is a mistake, lasting more than 30s, inside terminals (18 - 28) of relay KIT11.

TECHNICAL DATA

Symbol	Parameter	Conditions	Min.	Nom.	Max.	Unit	
U_{aux}	Supply voltage	Input(18-28) for 220V Input(18-14) for 110V	142 75	220 110	242 132	V V	
I_{aux}	Supply current	$U_{aux} = \text{Nom.}$ $U_{aux} = \text{Max.}$		10,5	14	mA mA	
Supervision circuit	U_{bat}	Battery voltage of supervision circuit		60	220	264	V
	$U_c = \text{O.K.}$	Control voltage across pins (11-21)	O.K. range	40	47		V
	$U_c = \text{Fault}$		Fault range		25	39	V
	$I_c = \text{O.K.}$	O.K.- state measuring current in supervision circuit (11-21)	$R_p = 22k; U_c = 47V$	0,4			mA
	$I_c = \text{Fault}$		$R_p = 0k; U_c = 264V$			2,8	mA
	R_c	Input resistance (11-21)	$R_p = 22k; U_c = 220V$		1,9		mA
R_c	$R_p = 0-22k; U_c = 264V$				0,25	mA	
	Input resistance (11-21)	Input diodes shorted	90	94	98	kohm	
$T(U_c - 0)$ $T(U_c - 0)$ $T(U_{aux} - 0)$ $T(0 - U_c)$ $T(0 - U_{aux})$	Drop out time delay	$U_c = \text{O.K.}; U_{aux} = (\text{Min-Max})$	2,0	3	3,2	s	
		$U_c = \text{O.K.}; U_{aux} = (\text{Nom.} +/- 10\%)$	2,0	3	3,2	s	
		$U_c = \text{O.K.}; U_{aux} = (\text{Nom.} +/- 10\%)$		3		s	
	Turn on time	$U_c = \text{O.K.}; U_{aux} = (\text{Nom.} +/- 10\%)$	0,3	0,5	0,7	s	
		$U_c = \text{O.K.}; U_{aux} = (\text{Nom.} +/- 10\%)$		2		s	
R_c	Line resistance in circuit of n.c. auxiliary contact of Circuit breaker			22		kohm	
	Nominal power			3		W	
I_{max} U_{max}	Relay's Contact data	resistive load 50 Hz			8 400	A V.a.c.	
	Safety Voltage insulation	Relay contacts to supervision circuit (11, 21) and to auxiliary terminals (18, 28/14) Test: 50Hz; 1 minute	2	2,5		kV rms	
	Ambient humidity	Standard for electronic devices					
	Operation temperature		-10		+55	°C	
	Storage temperature		-25		+75	°C	

CONNECTION



CONNECTION

To supervise maximal possible part of the trip circuit, the terminals U_c : (11, 21) are wired directly to the trip contact of the protection. A line resistor $R_p = 22\text{ k}$, 5W) serves to guard the disconnected position of the circuit breaker. R_p can be placed to the screw terminals, close to the trip magnet or C.B.

For connection to the auxiliary supply select between terminals (14 or 18), regarding the available auxiliary battery (110 or 220)V. From the point of dissipation, 110V is better. Usually battery for tripping coil U_{bat} and auxiliary source for the protection is the same.

Housing-HX1
of mechanical Plug in system Combiflex

