

Abstract	<ul style="list-style-type: none"> • Continuous supervision of complete Trip circuit independent of the position of the breaker. • Monitors auxiliary operate contacts. 	<ul style="list-style-type: none"> • LED indicates healthy trip circuit. • 2 change-over contacts for remote indication.
Application	<p>The TSR relay is used to supervise the trip-circuit and this provides alarm</p> <ul style="list-style-type: none"> – for loss of DC supply – faults on the trip coil or cables independent 	<ul style="list-style-type: none"> of breaker position. – for faults on the breaker auxiliary contacts. – for faults in the supervision relay itself.
Design	<p>The TSR relay contains an electro-mechanical auxiliary relay with an RC-circuit in parallel for drop out delay. In series with the auxiliary relay coil there is a light emitting diode which lights up when the trip circuit is healthy (the relay is in the picked up position.)</p> <p>When the circuit breaker is open, a current of about 15mA flows through the LED and the auxiliary relay via terminal 13 and one contact of the circuit breaker trip coil. When this circuit is open or if the DC supply is lost, the auxiliary relay will drop out after 0.3s delay and give an alarm via the contacts of the relay.</p> <p>When the breaker is closed the TSR will supervise the trip ckt via terminal 21. If the protective relay trips the breaker, the protective relay contact will short-circuit the supply to the TSR. The circuit breaker will</p>	<p>open after a certain time and its auxiliary contacts will switch over. The protective relay contact will also open and TSR will be supplied via terminal 13 and additional supervision wire.</p> <p>The auxiliary relay in TSR will be in the picked up position during the time of :</p> <ol style="list-style-type: none"> 1) the closing of the protective relay output contact until the circuit breaker opens. 2) the change of position of the auxiliary contacts until the protective relay trip-contact breaks. <p>This is achieved with the aid of the RC circuit which will delay the drop-out of the auxiliary relay by about 0.3 sec. If the breaker fails, the protective relay trip contact will be closed longer than 0.3s and the TSR will give alarm.</p>

Technical data	Rated voltage Un:	24V DC	Max. load current:	5A		
		48V DC	Breaking capacity:			
		110V DC	AC cos ϕ 0.1	250V	10A	
		125V DC	DC L/R 40 ms	48V	1.5A	
		250V DC		55V	1.0A	
	Voltage variation	80– 110% of Un		110V	0.4A	
	Max. current in trip circuit (connection as per fig. 1)	15 mA		125V	0.3A	
				250V	0.15A	
	Contact data:	2 change over contacts		Insulation test:	2000V, 50Hz	
	Max. system voltage:	250V AC/ 300V DC		Weight;	0.4 kg	
			size:	2s, 6c		

Ordering table

Sl. No.	Rated Voltage DC in voltage	Ordering No.
1.	24V	1MYN569336-C
2.	48V	1MYN569336-A
3.	110V	IN 352-001-AS
4.	125V	1MYN569336-B
5.	220V	IN 352-001-AS
6.	250V	IN 352-001-AT

Terminal diagram

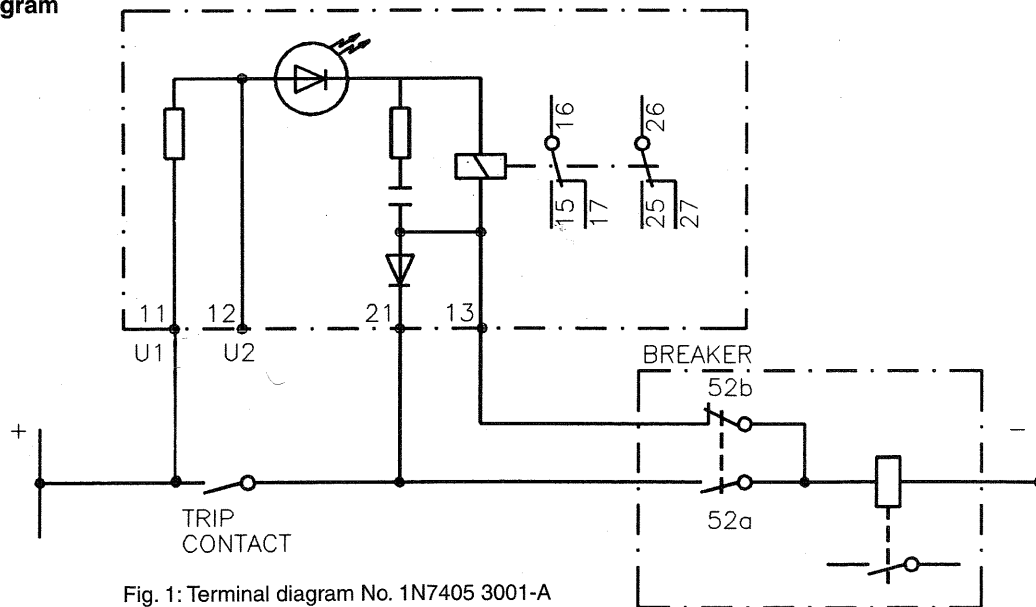


Fig. 1: Terminal diagram No. 1N7405 3001-A