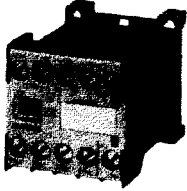
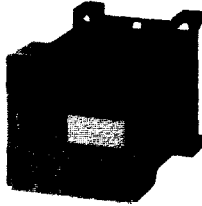
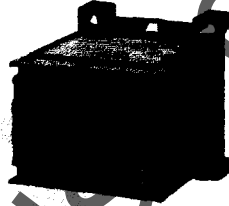
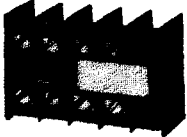
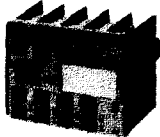
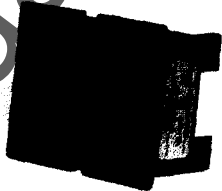


# Siemens Control Relays

3TH2 SIMICONT® Type

3TH2  
General

<p>Relay With Screw Terminals</p>  <p>3TH2022-0AK6</p>	<p>Relay With Tab Connections</p>  <p>3TH2040-1AK6</p>	<p>Relay for Tab Connection or Plug-in</p>  <p>3TH2031-3AK6</p>
<p>Auxiliary Contacts</p>  <p>3TX4440-0A</p>	<p>Auxiliary Contacts</p>  <p>3TX4440-0B</p>	<p>Plug-in Socket</p>  <p>3TX4491-2A</p>

## Description

3TH2 SIMICONT control relays feature a double bridge contact design that insures a high degree of contact reliability at low energy levels. The contacts are rated NEMA A600 for heavy duty control circuit applications. Auxiliary contact blocks and a surge suppressor can be snapped onto the front of the control relay.

SIMICONT control relays meet or exceed the requirements of NEMA, UL, CSA, IEC, VDE and other

international standards, the terminals are marked according to both North American and International standards. A wide range of 50 and 60 Hz AC and DC control voltages are available. Note: Coils and contacts are an integral part of the relay and cannot be changed.

Three different types of wire terminations are available within the SIMICONT control relay line.

**3TH20□□-0A□□** Screw terminal type which will accept two (2) solid or stranded wires.

**3TH20□□-1A□□** Fast on "tab" connectors which accept two (2) 0.110" x 0.032" (2.8mm x 0.8mm) push on connectors per terminal.

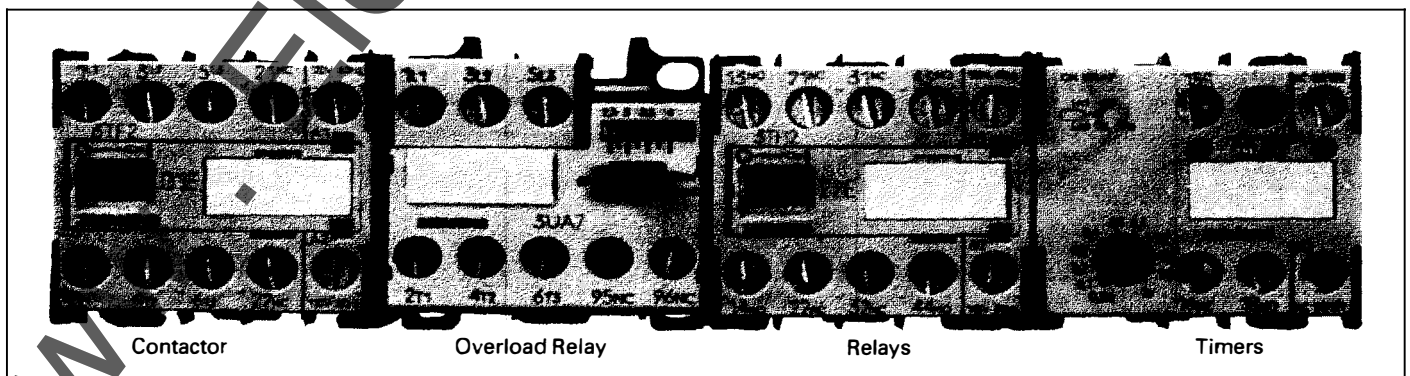
**3TH20□□-3A□□** Fast on "tab" connectors which will accept one (1) 0.220" x 0.032" (6.3mm x 0.8mm) push on connectors per terminal.

## SIMICONT Control Relay Features:

- Compact 45mm mounting width
- 35mm DIN rail or panel mounting
- Coil and terminal connections are on single level for easy connection

Can be used as part of the Siemens Miniature CONTROL Products offering. A complete compact line of control products (which also

includes 3TF2 Contactors, 3UA7 Overload Relays and 7PU8 Timers) which minimizes panel space, wiring time and shipping weight.



# Siemens Control Relays

## 3TH2 SIMICONT® Type

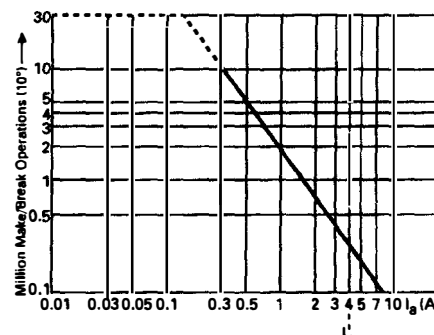
Technical

<b>Type</b>	<b>3TH20, 21, 22</b>	
<b>Mechanical Life</b>	AC Oper.	10 Million
<b>Make/Break Operations</b>	DC Oper.	30 Million
④, ⑤ and ⑥ ratings		
<b>Rated Control Voltage</b>	Max. AC 600 Volts Max. DC 250 Volts	
<b>Contact Rating – NEMA</b>	NEMA A 600 – Heavy Duty	
<b>Make/Break Capability</b>	Make VA	Break VA
	Amps	Amps
120V	7200 60	720 6
240V	7200 30	720 3
480V	7200 15	720 1.2
600V	7200 12	720 1.2
	NEMA Q 300 – Heavy Duty	
	Amps	
	0.55	
	0.27	
<b>Continuous Current Rating</b>	10 A at 240V AC	
<b>Rated Currents – IEC</b>	10 A	
Continuous Current $I_b$ / AC 12 (AC-1)		
Rated Operational Current $I_e$		
AC-15/AC-14 (AC-11)	110/220/230 V	4 A
	380/400 V	3 A
	500 V	2 A
	660/690 V	1 A
$I_b$ / DC-12/DC 1, at Rated Voltage	Current Path in Series	
	1	3
24 V	4 A	10 A
60 V	2 A	10 A
110 V	1.1 A	6 A
220 V	0.5 A	2.5 A
$I_b$ DC-13 (DC-11) at Rated Voltage	24 V	2.1 A
	60 V	0.9 A
	110 V	0.5 A
	220 V	0.27 A
<b>Ambient Temperature Range</b>	–25 to +55 °C	
<b>Coil Ratings</b>	(With Cold Coil and $1.0 \times U_s$ )	
	50 Hz	60 Hz ②
AC Operation	Inrush	15 VA
	p.f.	14.4 VA
	0.41	16.5/13.2 VA
Sealed	6.8 VA	6.1 VA
p.f.	0.42	0.46
DC Operation	Inrush = p.f.	3 W, 1.2 W at 24 V for special DC operated device
<b>Coil Ratings for 3TH27</b>	(With Cold Coil and $1.0 \times U_s$ )	
AC Operation	Inrush	22 VA, p.f. = 0.41
	Release	6.8 VA; p.f. = 0.42
DC Operation	Inrush	3 W
	Release	3 W

<b>Type</b>	<b>3TH20, 21, 22</b>	
<b>Coil Voltage Tolerances</b>	0.8 to $1.1 U_s$	
AC	0.8 to $1.1 U_s$	
DC	0.7 to $1.25 U_s$ for special DC operated device	
<b>Operating times</b> ①	0.8 to $1.1 \times U_s$	
Total Break Time =	Opening Delay + Arcing Time	
AC Operation	Closing Delay	NO 5- 20 ms
	NC	3- 20 ms
	Opening Delay	NO 3- 24 ms
	NC	4- 12 ms
	Arcing Time	10 ms
DC Operation	Closing Delay	NO 16- 40 ms
	NC	4- 10 ms
	Opening Delay	NO 3- 6 ms
	NC	13- 40 ms
	Arcing Time	10 ms
<b>Coil Signal Duration for 3TH27</b>		
AC Operation	Closing	min. 35 ms
	Opening	min. 30 ms
DC Operation	Closing	min. 80 ms
	Opening	min. 30 ms
<b>Operation Times</b> ② $1.0 \times U_s$		
AC Operation	Closing Delay	NO 6- 17 ms
	NC	5- 20 ms
	Opening Delay	NO 3- 24 ms
	NC	5- 12 ms
DC Operation	Closing Delay	NO 18- 42 ms
	NC	4- 10 ms
	Opening Delay	NO 3- 5 ms
	NC	15- 26 ms
<b>Switching Frequency z</b>	In Make/Break Operations per Hour at Rated Operation for Duty	
	AC-12/DC-12	1000/h
	AC-2	500/h
	AC-3	1000/h
	AC-15/AC-14 and DC-13	1200/h
No-load Switching Frequency	10,000/h	
<b>Conductor Sizes</b>		
Screw Terminals; Solid or Stranded	(2) # 14-12 AWG	
<b>Resistance to Shock</b> (Rectangular Pulse)		
AC Operation	7/5 and 4/10 g/ms	
DC Operation	10/5 and 6/10 g/ms	

### Contact Life

The contact life depends primarily on the breaking current. It is assumed that the control devices operate randomly, i.e. not synchronized with the phase angle of the system.



① The opening delay increases when surge suppressors are used (diode 6 to 9 times, varistor 2 to 5 ms)

② 50 and 60 Hz coils; coil voltage tolerance 0.8 to  $1.1 \times U_s$  at 50 Hz operation 40°C is the maximum allowable ambient temperature when operation coils at  $1.1 \times U_s$

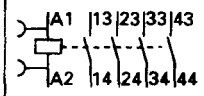
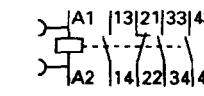
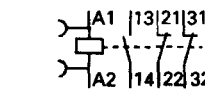
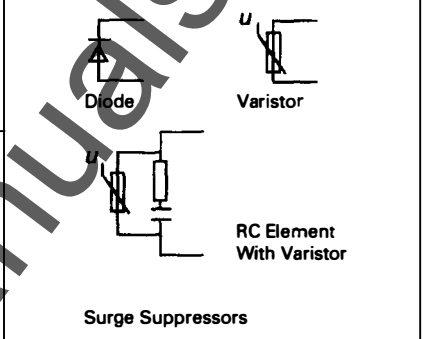
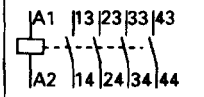
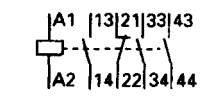
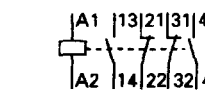
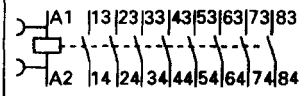
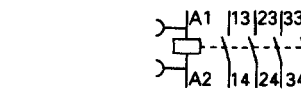

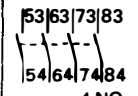





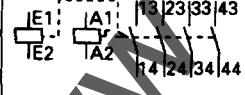
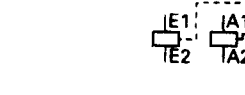

continuous duty, with devices mounted side by side without air gap. Values in brackets = Power consumption of coil at 50 Hz.

# Siemens Control Relays

3TH2 SIMICONT® Type

Wiring Diagrams

## Terminal Designations According to DIN EN 50 011

 <p>4 NO Code: 40E</p>	 <p>3 NO + 1 NC 31E</p>	 <p>2 NO + 2 NC 22E</p>	 <p>Diode Varistor RC Element With Varistor Surge Suppressors</p>
<p><b>3TH20...-0, 3TH20...-1</b> relays AC and DC operation with screw terminals, with tab connectors 2.8mm-0.8mm</p>			
 <p>4 NO Code: 40E</p>	 <p>3 NO + 1 NC 31E</p>	 <p>2 NO + 2 NC 22E</p>	
<p><b>3TH20...-3, 3TH20...-6, 3TH20...-7</b> relays AC and DC operation with tab connectors 6.3mm-0.8mm, with solder-pin connections</p>			
 <p>8 NO Code: 80E</p>	 <p>7 NO + 1 NC 71E</p>	 <p>6 NO + 2 NC 62E</p>	
<p><b>3TH2040</b> relay with <b>3TX44...-0</b> auxiliary contact block, also <b>3TH21</b> or <b>3TH22</b> relays.</p>			
 <p>4 NO Code: 40</p>	 <p>3 NO + 1 NC 31</p>	 <p>2 NO + 2 NC 22</p>	
 <p>2 NO Code: 20</p>	 <p>1 NO + 1 NC 11</p>	 <p>2 NC 02</p>	
<p><b>3TX44...-2</b> auxiliary contacts</p>			
 <p>4 NO Code: 40E</p>	 <p>3 NO + 1 NC 31E</p>	 <p>2 NO + 2 NC 22E</p>	
<p><b>3TH27</b> relay</p>			