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VT1 and VT1(T) Relays

Two element ac induction Track Relay

General data

- Height: 208 mm (including lock plunger).
- Width: 157 mm.
- Depth: 248 mm (including relay handle).
- Weight: 6.5 kg (approximate)



Description

The style VT1 is a two element ac induction track relay in which a pivoted vane is caused to rotate in a magnetic field. The magnetic field is produced by two elements each consisting of a winding on a laminated iron core.

These elements are termed 'Local' and 'Control'. The rotary movement of the vane is converted into linear movement by cranks and links and transmitted to contact assemblies.

Contact Information

VTI 4F, 2B Contacts - SJ509/1, SJ509/11, SJ509/9 and SJ509/17

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | |
|---|----------------|----|----|----|----|--|--|--|---------------|--|----|----|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | | | | | | 15 | 45 | | | | |
| | | 14 | 24 | 34 | 44 | | | | | | 16 | 46 | | | | |

VTI 4F, 2B Contacts - SJ509/2 and SJ509/16

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|----|----|----|---------------|--|----|----|----|----|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | 53 | 63 | 73 | 83 | | 15 | 45 | 55 | 85 | | | | |
| | | 14 | 24 | 34 | 44 | 54 | 64 | 74 | 84 | | 16 | 46 | 56 | 86 | | | | |

VTI 4F, 2B Contacts - SJ509/4 and SJ509/15

| Coil Connection | Front Contacts | | | | Back Contacts | | | | | | | | | | | | |
|---|----------------|----|----|--|---------------|--|--|--|--|----|----|--|--|--|--|--|--|
| See Coil Connection Diagrams on next page | | 23 | 33 | | | | | | | 13 | 43 | | | | | | |
| | | 24 | 34 | | | | | | | 14 | 44 | | | | | | |

VTI 4F, 2B Contacts - SJ509/5, SJ509/7, SJ509/13 and SJ509/14

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|----|----|--|---------------|--|----|----|----|----|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 33 | 43 | 53 | 63 | 83 | | | | 15 | 45 | 55 | 85 | | | | |
| | | 14 | 34 | 44 | 54 | 64 | 84 | | | | 16 | 46 | 56 | 86 | | | | |

VTI 4F, 2B Contacts - SJ509/6

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|--|--|--|---------------|--|----|----|----|----|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | | | | | | 15 | 25 | 35 | 45 | | | | |
| | | 14 | 24 | 34 | 44 | | | | | | 16 | 26 | 36 | 46 | | | | |

VTI 4F, 2B Contacts - SJ509/10

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|----|----|--|---------------|--|----|----|--|--|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | 15 | 45 | | | | 25 | 35 | | | | | | |
| | | 14 | 24 | 34 | 44 | 16 | 46 | | | | 26 | 36 | | | | | | |

VTI 4F, 2B Contacts - SJ509/12

| Coil Connection | Front Contacts | | | | Back Contacts | | | | | | | | | | | | |
|---|----------------|----|----|--|---------------|--|--|--|--|----|----|--|--|--|--|--|--|
| See Coil Connection Diagrams on next page | | 23 | 33 | | | | | | | 13 | 43 | | | | | | |
| | | 24 | 34 | | | | | | | 14 | 44 | | | | | | |

VTI 4F, 2B Contacts - SJ509/3

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|--|--|--|---------------|--|----|----|--|--|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | | | | | | 15 | 45 | | | | | | |
| | | 14 | 24 | 34 | 44 | | | | | | 16 | 46 | | | | | | |

VTI 4F, 2B Contacts - SJ509/8

| Coil Connection | Front Contacts | | | | | | | | Back Contacts | | | | | | | | | |
|---|----------------|----|----|----|----|----|----|----|---------------|--|----|----|----|----|--|--|--|--|
| See Coil Connection Diagrams on next page | | 13 | 23 | 33 | 43 | 53 | 63 | 73 | 83 | | 15 | 45 | 55 | 85 | | | | |
| | | 14 | 24 | 34 | 44 | 54 | 64 | 74 | 84 | | 16 | 46 | 56 | 86 | | | | |

Contact Information

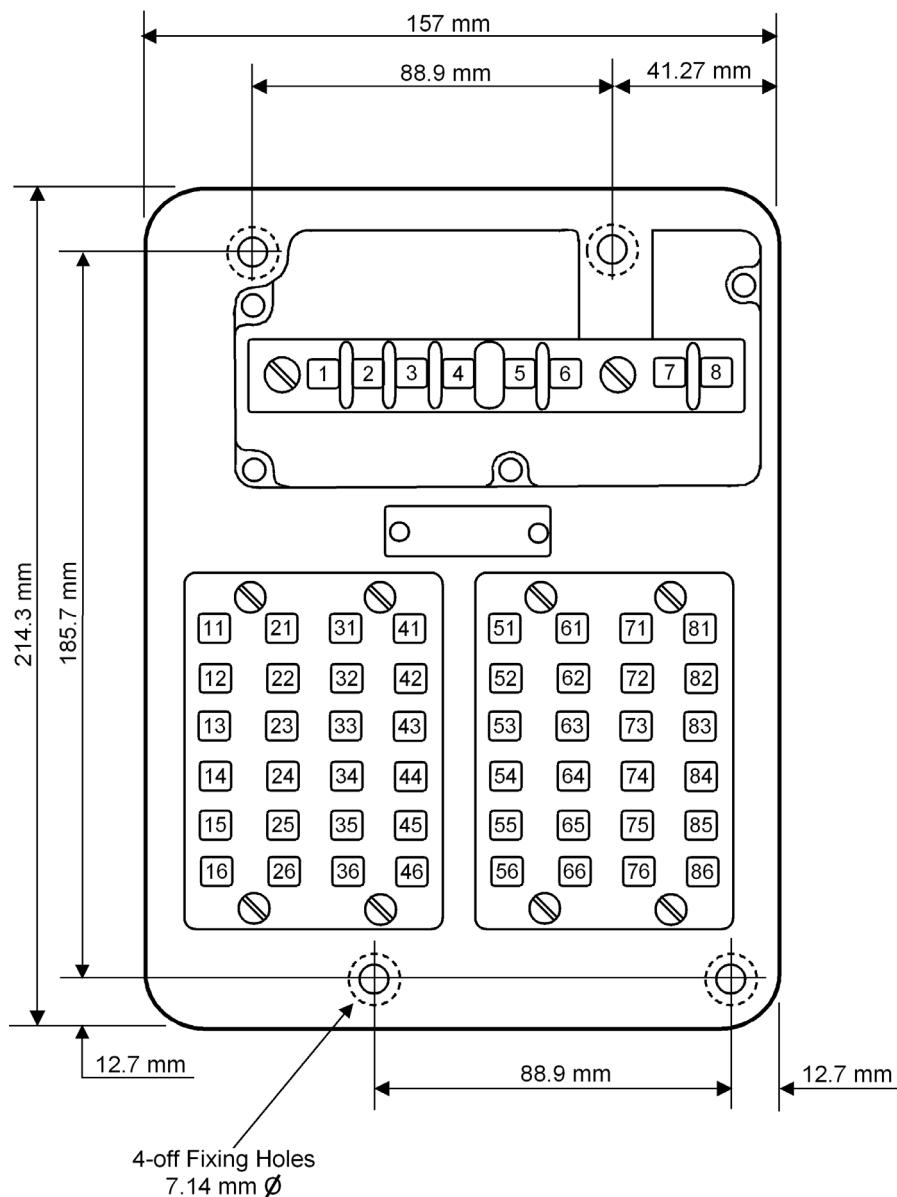
Application

The style VT1 relay is designed for use in ac double and single rail resistive or capacitive fed track circuits.

In capacitive fed applications the 'Control' winding is made to resonate using an internally mounted capacitor.

This gives the sensitivity and correct phase shift for this application. In resistive fed applications the control winding is unresonated.

Mounting base details viewed from



Technical data

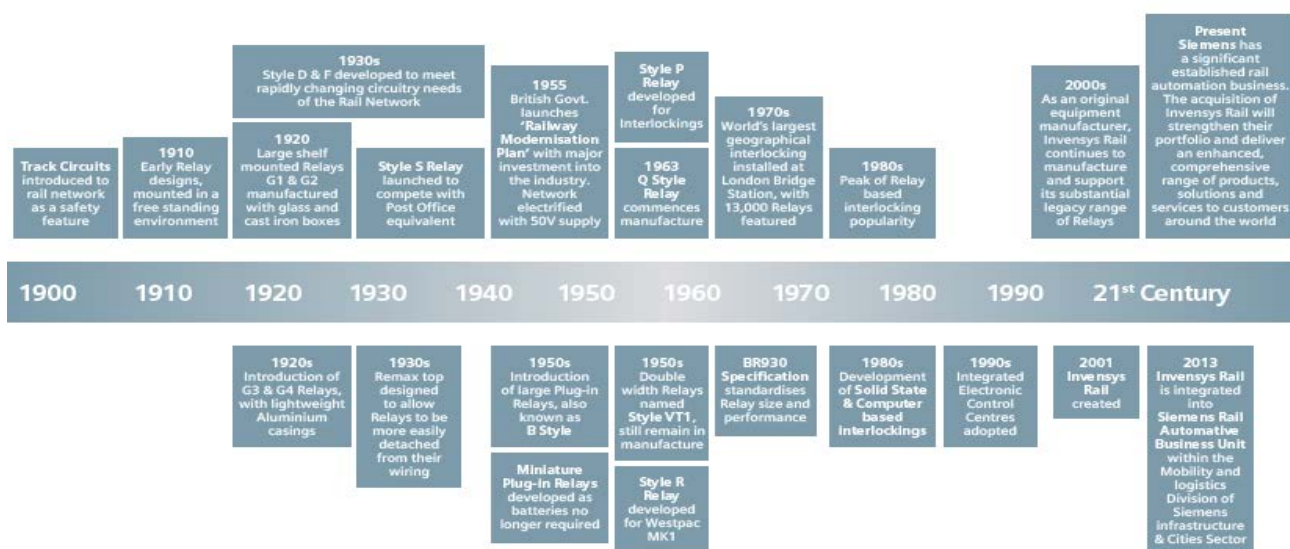
| Siemens Part No. (Pad No.) | Contact Arrangement | Local Volts (ac) | Control Volts (ac) | Frequency | Mounting Base | Reqd No. Of Connectors J976/1 | Remarks |
|----------------------------|---------------------|------------------|--------------------|-----------|---------------|-------------------------------|-------------------------------|
| SJ509/1 (88/030703) | 4F 2B | 110 | 1.0 | 50 | A59785/7 | 16 | Capacitive Fed |
| SJ509/2 (88/044226) | 8F 4B | 110 | 1.0 | 50 | A59785/16 | 28 | Capacitive Fed |
| SJ509/3 (88/044371) | 4F 2B | 110 | 1.0 | 50 | A59783/34* | 16 | Capacitive Fed |
| SJ509/4 (88/044376) | 2F 2B | 110 | 1.0 | 50 | A59785/1 | 12 | Capacitive Fed |
| SJ509/5 | 6F 4B | 220 | 2.5 | 75 | A59785/100 | 24 | Resistive Fed |
| SJ509/6 | 4F 4B | 220 | 220 | 75 | A59785/101 | 20 | Power On Power Off |
| SJ509/7 | 6F 4B | 220 | 1.0 | 50 | A59785/102 | 24 | Resistive or Capacitive Fed** |
| SJ509/8 (88/044377) | 8F 4B | 110 | 1.0 | 50 | A59783/36* | 28 | Capacitive Fed |
| SJ509/9 | 4F 2B | 155*** | 4.5 | 95 & 105 | A59785/103 | 16 | Resistive Fed |
| SJ509/10 | 6F 2B | 110 | 1.5 | 50 | A59785/14 | 20 | Capacitive Fed |
| SJ509/11 | 4F 2B | 110 | 1.5 | 50 | A59785/7 | 16 | Resistive Fed |
| SJ509/12 (88/044373) | 2F 2B | 110 | 1.0 | 50 | A59783/33* | 12 | Capacitive Fed |
| SJ509/13 | 6F 4B | 115 | 0.5 | 100 | A59785/106 | 24 | Capacitive Fed |
| SJ509/14 | 6F 4B | 115 | 5.5 | 60 | A59785/7107 | 24 | Resistive Fed |
| SJ509/15 | 2F 2B | 115 | 3.05 | 60 | A59785/108 | 12 | Resistive Fed |
| SJ509/16 | 8F 4B | 220 | 2.5 | 75 | A59785/109 | 28 | Resistive Fed |
| SJ509/17 | 4F 2B | 110 | 0.5 | 50 | A59785/112 | 16 | Capacitive Fed |

* Denotes mounting base fitted with test switch (VT1(T) relay).

** When capacitive fed a 2µF capacitor must be fitted across terminals C and D.

*** Volts across Local Winding when fed from 220 V via 0.7 µF capacitor.

A History of Relay Development



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The information within this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.