TRIP CIRCUIT SUPERVISION RELAY : ATSR31A WITH HR TYPE FLAG

Introduction:

ASHIDA has designed economical & reliable Trip Circuit Supervision Relay. The simple and compact construction of ATSR31A relay provides indication and Control for pre and post closing supervision of CB Trip Circuit.

Features:

- Simple & reliable construction
- Compact panel mounting case
- Sensing points are high impedance type and can be used on any type of trip circuits.
- Supervises both pre closing and post closing conditions.
- Checks ON: Control voltage, Interlocks, Solenoid Coil wiring and TRIP coil healthiness.
- Checks the Trip coil loose connection (>300 ohm) or shorting (< 10 ohms).
- Supervises the link cable between C. R. Panel and C. R. Panel Trip circuit connections.
- Very low burden on Aux. supply. (Less than 3VA).
- Self TEST facility for routine maintenance check.
- Immune to momentary dips in control voltage

Application:

- Pre and Post closing supervision of CB Trip Circuit.
- Supervision of Tripping relay operating coil.

Control and Indications:

- ON : Trip Supply Indicator
- FAULT: Trip Circuit Faulty Indicator
- TEST : Self Test of Relay

Operation:

The status input for circuit breaker 52A (CB NO) & 52B (CB NC) are used for monitoring the healthiness of circuit breaker trip coil. The trip circuit of circuit breaker is normally wired through the protection relay contacts, interlocked with CB auxiliary contacts and other interlocks (like spring charging full etc.) and then connected to Trip solenoid coil of circuit breaker and control voltage source through fuse links. ATSR relay continuously senses the voltage at these junction points. The absence of the required voltage (as per logic), relay immediately triggers the internal timer (1.0 sec. Time delay). After time delay, it is reported as fault by relay operation. The mechanical flag will operate which gives visual annunciation and relay contacts (2NC and 2NO) or (2NC and 4NO optional) operate.

The ATSR31A relay provided with (2NC and 2NO) or (2NC and 4NO optional) contacts. In healthy conditions contacts are operated i.e. NO contacts is short and NC contact is open. In fault condition NO contact is open and NC contact is short.

Trip Circuit Faulty Condition:

- Link between Protection Relay NO and CB Aux. Contact is open.
- TC coil is open.
- Control supply is less than 50%.

Installation:

ATSR31A relays are robust in construction; require careful treatment to installation on site. By following simple procedure the possibility of premature failure can be eliminated. The installation should be clean, dry and reasonably free from dust and

excessive vibration. The site should preferably be well illuminated to facilitate inspection.

ATSR31A supports rack mounting and can be mounted into panels using M4 X 10 screws with 4mm washer.

Procedure for mounting the device into panel:

Loose the M4 X 10 screws from the relay, then insert the Relay into the panel cut-out as show below.

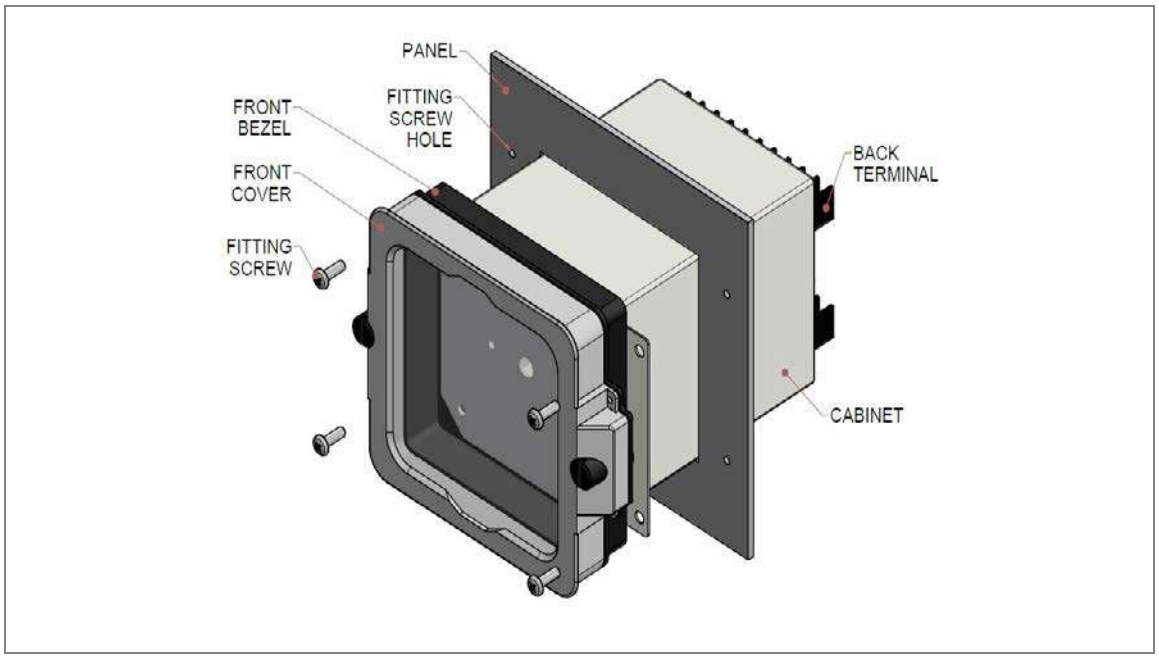


Figure 1: Inserting relay in to the panel cut-out

After inserting the Relay in the Panel, use M4 X 10 Screws to fasten the relay to the Panel.

Caution: All screws should be fastened properly. Always use M4 X10 screws

The Relay after fastening to the Panel with M4 X 10 Screws is shown below.

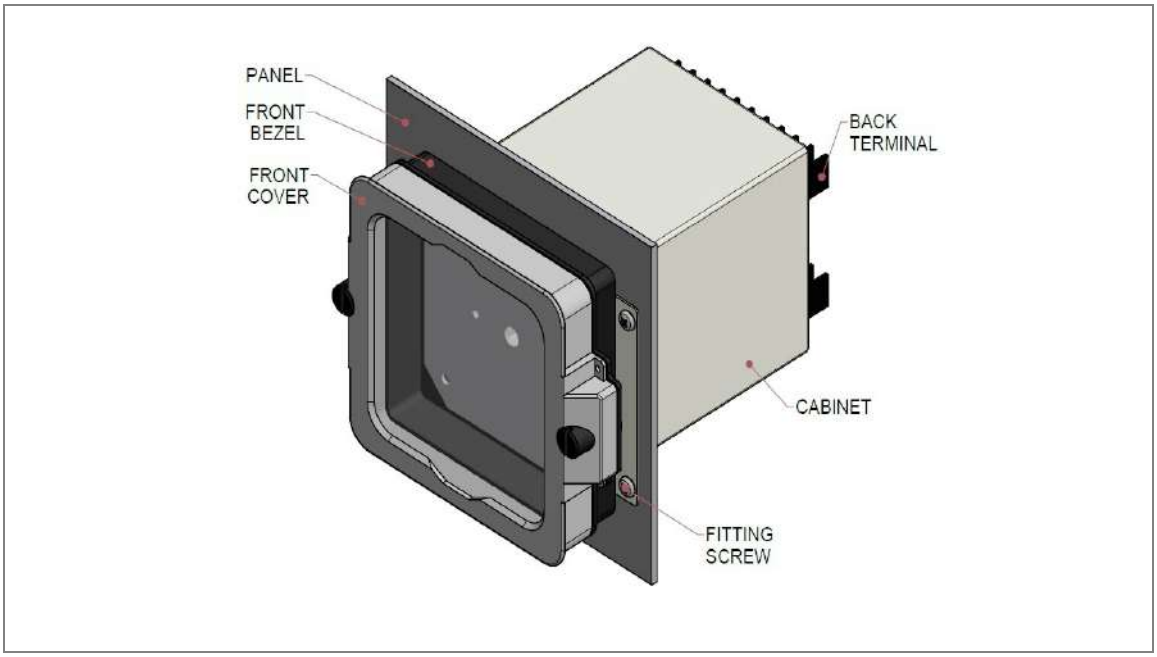


Figure 2: Relay mounted on the panel-front view

Relay Connection and Diagram

Refer proper connection Diagram before starting installation process. Avoid exposing any bare terminals, as it could be hazardous. Follow ESD Precautions. Voltage connections should be done with insulated crimp termination for safety purpose.

Before Energizing following things should be checked

- Voltage rating and polarity.
- Protective fuse rating.
- Integrity of the earthing connection.
- Voltage rating of external wiring, applicable as per application.

Technical Specification:

Auxiliary Supply:		
Sr. No.	**Specification**	**Particulars**
1.	Control Supply	24/ 30/ 110/ 220 VDC (Specify while ordering)
2.	Auxiliary Annunciation Supply	24/ 30/ 110/ 220 VDC (Specify while ordering)
3.	Trip Coil DC resistance	less than 200 Ohm. If higher to be specification.
4.	Auxiliary Supply Burden	less than 3 VA

Output Contacts:		
Sr. No.	**Specification**	**Particulars**
1.	Control Contacts	2NO + 2NC / 2NC + 4NO (Optional) (Self Reset)
2.	Contact Rating	Alarm Duty – 10Amp. AC at 230 VAC
3.	Operating Time	1.0 Sec (±0.1 Sec.)

Operating Conditions:		
Sr. No.	**Specification**	**Particulars**
1.	Relative Humidity	: Humidity (RH) 95% maximum
2.	Operating temperature range	: -25 ºC to +65 ºC
3.	Storage temperature range	: -25 ºC to +70 ºC.

Mechanical specification:		
1.	Design	Flush mounting case
2.	Weight	1.250 Kg approximate
3.	Case Dimensions	142.5 x 122.5 x 168 mm

Drawing Reference:

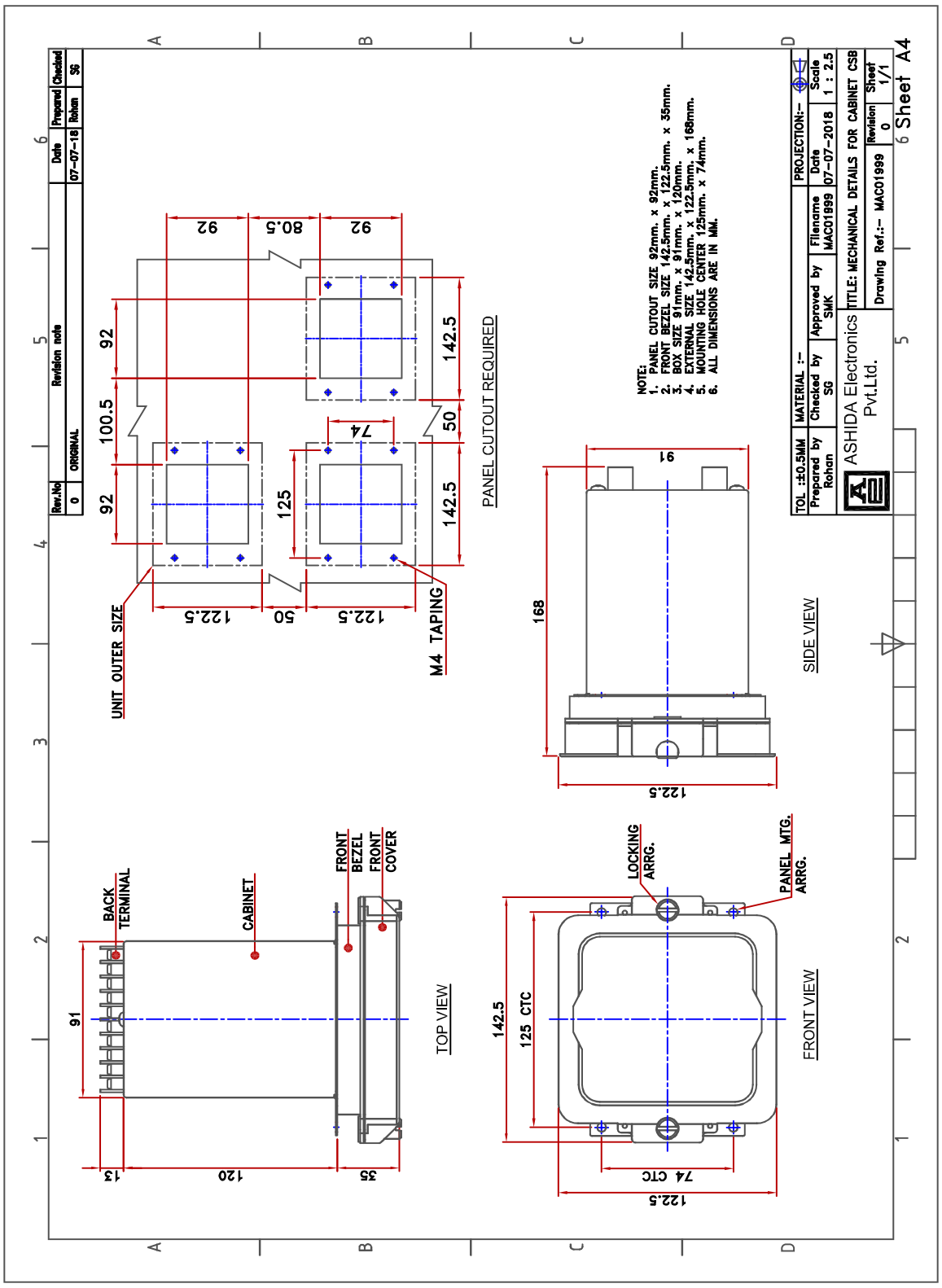
Drawing References:		
1.	For Cabinet Type	: MAC01999 (CSB)
2.	Electrical Connection (2 NO + 2 NC)	: AXL00603
3.	Electrical Connection (4 NO + 2 NC)	: AXL00605

Typical Tests Information:

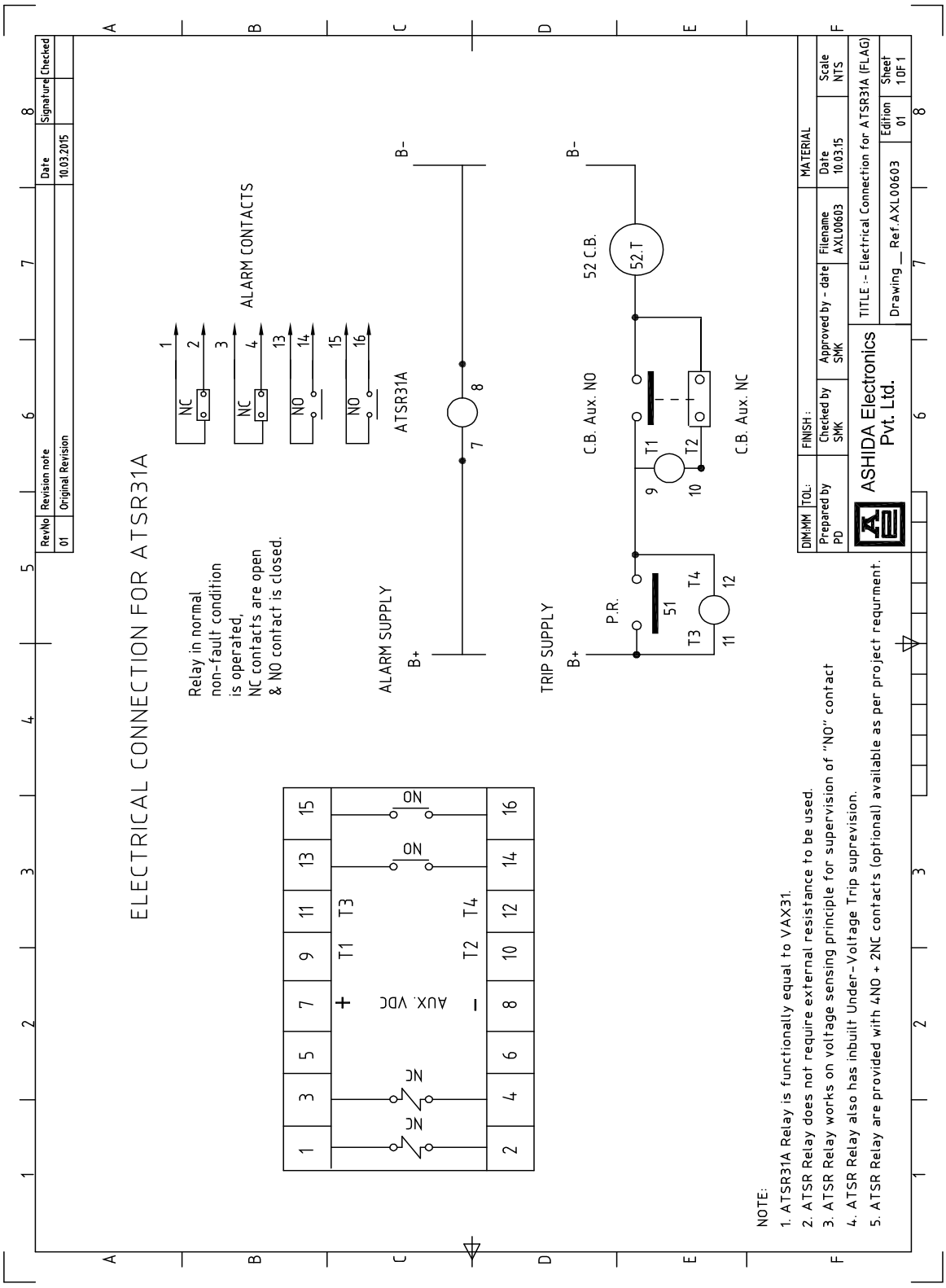
The Relay Confirm to following standard		
Insulation Tests:		
Sr. No.	**Standard**	**Test**
1.	High Voltage Test	IEC 60255-27: 2005
2.	Impulse Voltage Test	IEC 60255-27: 2005
3.	Insulation Resistance	IEC 60255-27: 2005
Environmental tests:		
4.	Cold test (Storage)	IEC 60068-2-1:2007; EN 60068-2-1:2007
5.	Cold test (Operational)	IEC 60068-2-1:2007; EN 60068-2-1:2007
6.	Dry heat test (Storage)	IEC 60068-2-2:2007; EN 60068-2-2:2007
7.	Dry heat test (Operational)	IEC 60068-2-2:2007; EN 60068-2-2:2007
Accuracy and performance Test		
8.	Functional Test	IEC 60255-1 : 2009
9.	Operating Time Test	
10.	Temperature Rise Test	
11.	Mechanical Endurance Test	
12.	Relay Contact Rating	
13.	Making Capacity Test	
14.	Breaking Capacity Test	
15.	Short time current withstand test	
16.	Rated burden for auxi. Supply	
Mechanical tests		
17.	Vibration Response Test	IEC 60255-21-1 : 1988; EN 60255-21-1 : 1996
18.	Shock Response Test	IEC 60255-21-2 : 1988; EN 60255-21-2 : 1996

Note: Type test reports are available on request

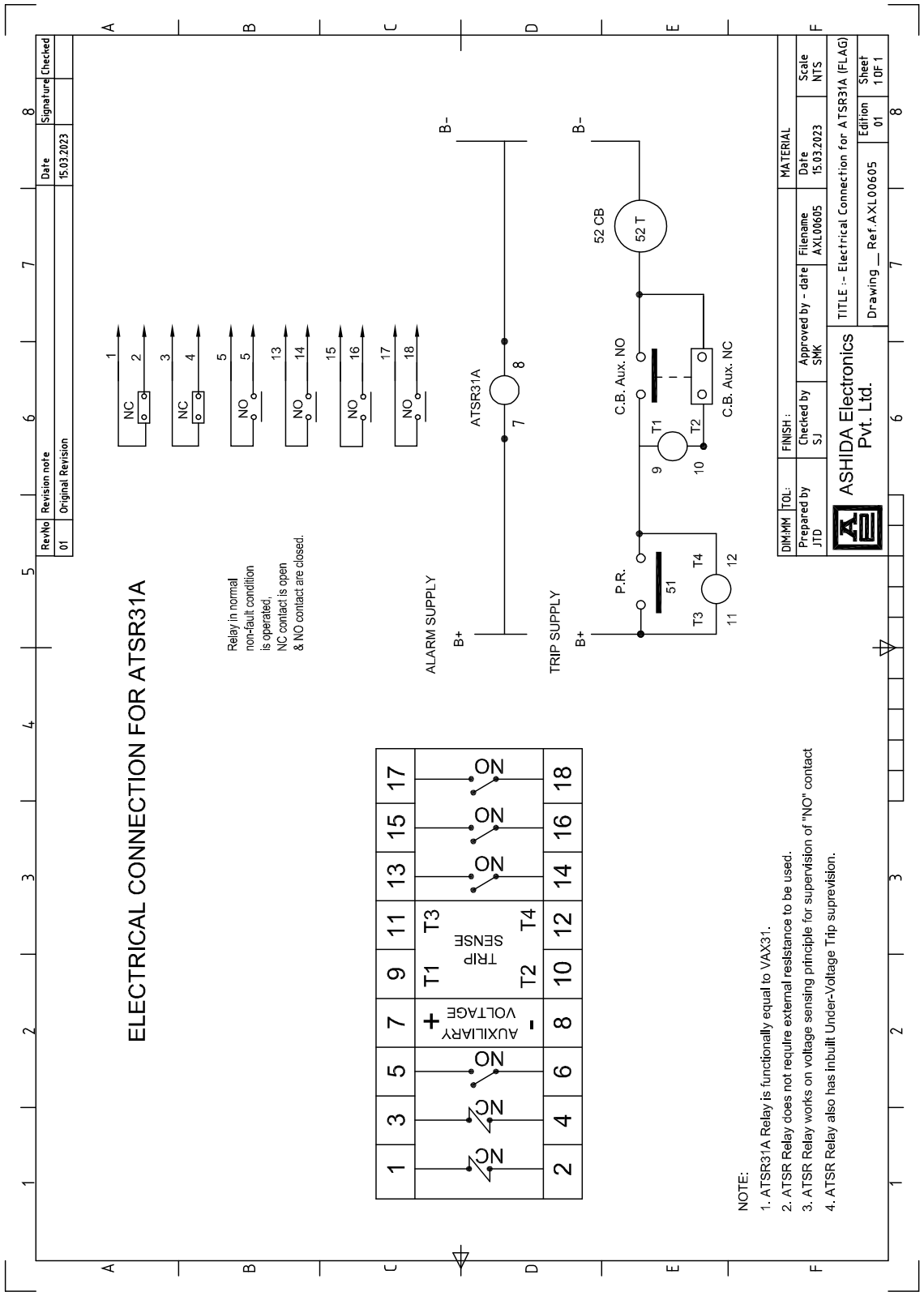
Mechanical Dimensions



Back Terminal & Electrical wiring connection diagram (AM-210)



Back Terminal & Electrical wiring connection diagram (AM-220)



Ordering Information:

Ordering Information													
	1 - 3	4	5	6	7	8	9	10	11	12	13	14	15
ATSR31A - AM	**XXX**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
ATSR31A - AM	210	0	3	0	1	0	4	0	0	0	0	0	0
Sub Type													
Contact: 2NO + 2NC SR, With Mech Flag HR type	210												
Contact: 4NO + 2NC SR, With Mech Flag HR type	220												
Cabinet Size													
CSB (92 x 92mm)		0	3										
Cabinet Type													
Non Draw out				0	1								
Auxiliary Supply													
24/30 VDC						0	1						
110 VDC						0	4						
220 VDC						0	5						
CT													
Not Applicable								0	0				
PT													
Not Applicable										0	0		
Communication Protocol													
Not Applicable												0	0

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ISO 9001 Company

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