

VOLTAGE OPERATED AUXILIARY RELAY S: AVA3X

Introduction:

ASHIDA has designed economical & reliable Voltage operated Auxiliary Relays. The simple and compact construction of AVA3X Series relay's are suitable for contact multiplication and auxiliary functions. ASHIDA relays are known for reliability, performance and security. ASHIDA auxiliary relays are design for all condition and application.

The AVA3X series relay's consist of three independent coil (Element A, Element B & Element C) in a same cabinet. The AVA3X Series relays are available in three models – AVA31, AVA32 and AVA33. AVA3X series relays are provided with 4 numbers of contacts per element, having three types of Reset contact i.e. Self Reset, Hand Reset and Self + Hand Reset, with or without operation indicator flag. The flag can be either Forward or Reverse flag.

The AVA3X series relays available in wide range of Auxiliary supply 24V, 30V, 110V and 220V AC or DC. The operating Time of relay is 20 – 25 ms at nominal rated voltage.

Features:

- Simple & reliable construction
- Compact panel mounting case
- Three independent coils in one cabinet.
- Attracted armature type compact design with positive action.
- Contacts conform to IEC 60255, Duty: 1250 VA.
- Self Reset, Hand Reset and Self + Hand Reset contacts are available (with or without flag)

Available Models in AVA3X Series:

AVA31	AVA32	AVA33
Self Reset Contacts	Self + Hand Reset Contacts	Hand Reset Contacts

Available Contact Combinations:

AVA31 (Element A, B & C)

- 4 NO SR
- 3 NO + 1 NC SR
- 2 NO + 2 NC SR
- 1 NO + 3 NC SR
- 4 NC SR

AVA32 (Element A, B & C)

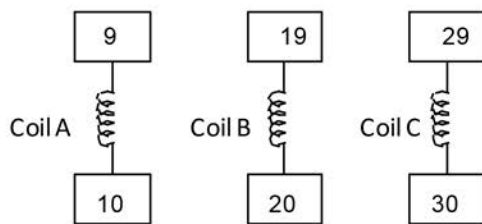
- 2 NO SR + 1 NO_1 NC HR
- 1 NO_1 NC SR + 1 NO_1 NC HR

AVA33 (Element A, B & C)

- 4 NO HR
- 3 NO + 1 NC HR
- 2 NO + 2 NC HR
- 1 NO + 3 NC HR
- 4 NC HR

Operation:

The coil of each element is directly brought to back terminal no 9, 10 (element A), terminal no. 19, 20 (element B) and terminal no. 29, 30 (element C). After applying energizing voltage to coil terminal no 9, 10 (element A), terminal no. 19, 20 (element B) and terminal no. 29, 30 (element C) (as shown in below figure), the relay element operates, NO contact closes and NC contact opens. Relays are available with or without operational flag or Reverse flag and with DC or AC coil.



Internal Wiring Diagram

Type of Flags Available:

Standard Flag:

AVA3X Relays are available with standard Hand-Reset Flag which drops upon operation of the relay. The flag stays in the operated state, indicating that a fault has occurred. Standard Flag can be made available for any type of AVA3X model.

Reverse Flag:

AVA3X Relays are available with Reverse Flag. At normal conditions, when the coil is energized the flag is in reset condition. Whenever the coil is de-energized the flag drops. Reverse Flag is available only for models having Self Reset Contacts.

Installation:

AVA3X 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 place of installation should be clean, dry and reasonably free from dust and excessive vibration. The site should preferably be well illuminated to facilitate inspection.

AVA3X supports panel mounting and can be mounted into panels using M4 X 10 screws with 4mm washer.

Procedure for mounting the device into panel:

Unfasten the screws from the relay, then insert the Relay into the panel cut-out as show below.

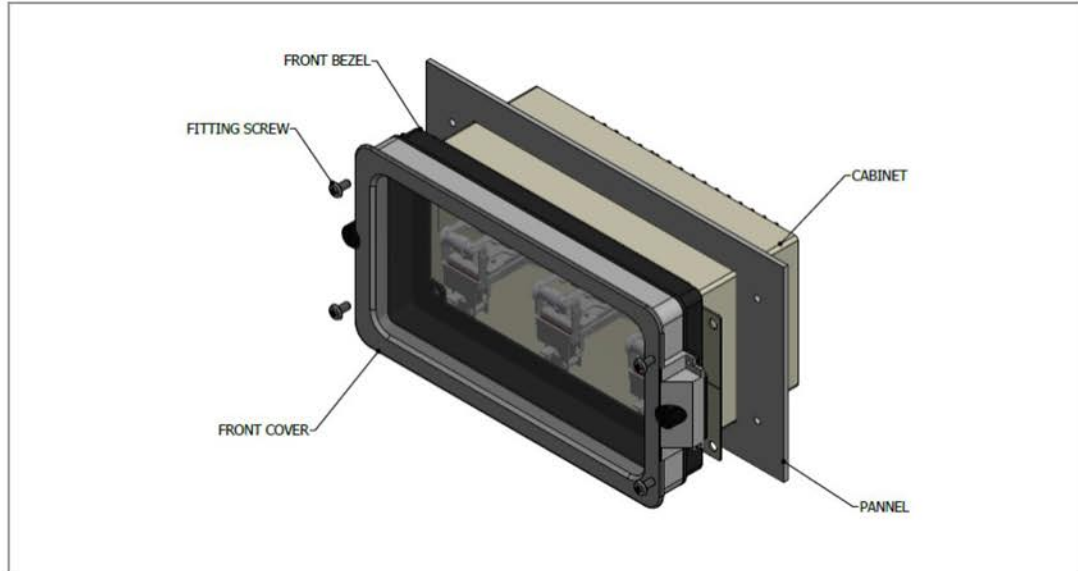


Figure 1: Inserting relay in to the panel cut-out

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.

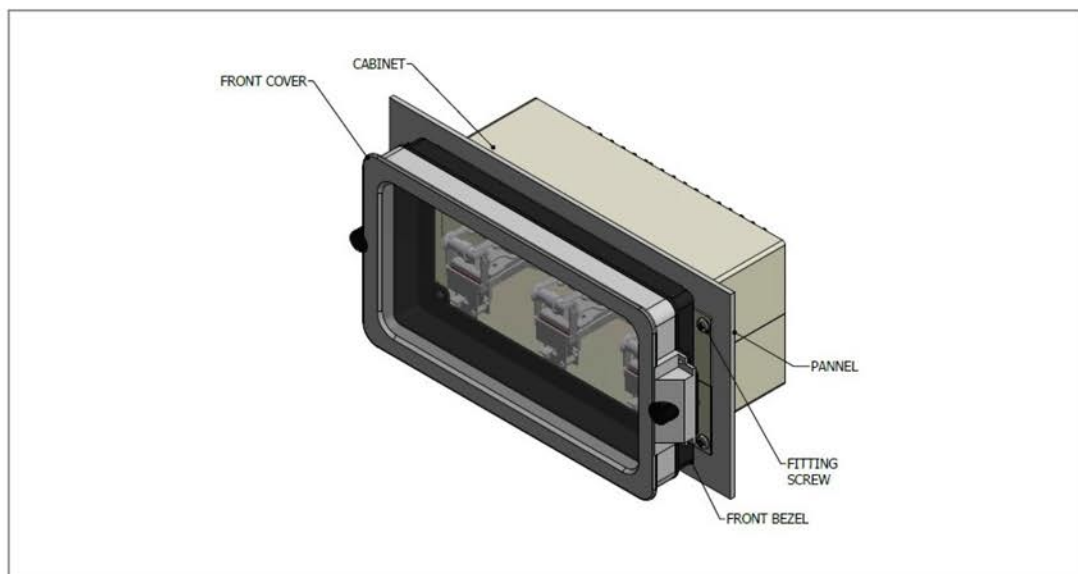


Figure 2: Relay mounted on the panel-front view



Figure 3: Relay back terminal view

Relay Connection

Before installation of the relay, check the correct working procedure as to ensure safety. The equipment must be connected in accordance with the appropriate connection diagram.

The Terminal exposed during installation may present a hazardous voltage unless the equipment is electrically isolated. Any disassembly of the equipment may expose parts to hazardous voltage. Electronic parts may be damaged if suitable electrostatic discharge (ESD) precautions are not taken.

Connections should be made using insulated crimp termination to ensure that terminal block insulation requirements are maintained for safety. To ensure that wires are correctly terminated the correct crimp terminal and tool for wire size should be used.

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 Input:		
Sr. No.	Specification	Particulars
1	Nominal Operating Supply	24 V/ 30 V/ 110 V/ 220 V DC or AC (Specify while ordering)
2	Nominal Operating Range.	80% to 120% of rated operating voltage. 24V (19.2 – 28.8 V) 30V (24 – 36 V) 110V (88 – 132 V) 220V (176 – 264 V)
3	Supply Burden	3 VA @ 24 V/ 30 V DC or AC 2 VA @ 110 V DC or AC 4 VA @ 220 V DC or AC

Output Contacts:			
Sr. No.	Specification	Particulars	
1	Output Contacts	Make & carry	: 1250 VA/ W with 5Amp & 660V AC/DC
		Make & carry for 3 sec	: 7500 VA /W 30Amp & 660V AC/DC
		Breaking capacity	:1250 VA with 5Amp & 660VAC 100 W Resistive 50 W Inductive 5A/660V DC
2	Operating Time	: 20-25 ms @ rated voltage	
3	Durability	Loaded Contact	10,000 operation minimum
		Unloaded Contact	1,00,000 operation minimum

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

Mechanical specification:		
1.	Design	Flush mounting case
2.	Weight	1.900 Kg approximate
3.	Case Dimensions	235.5 x 122.5 x 126.5 mm

Drawing Reference:

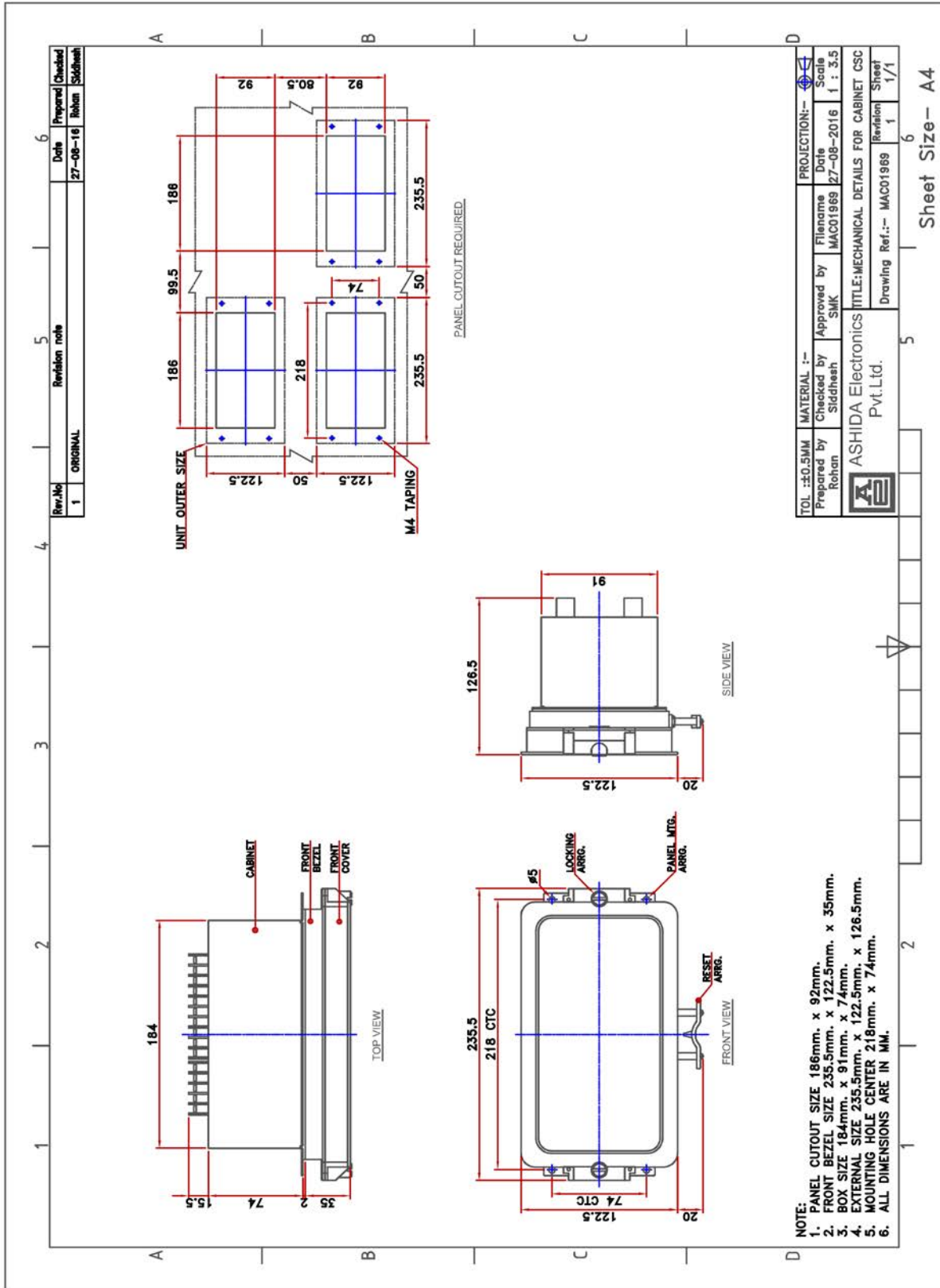
Drawing References:		
1.	For Cabinet Type:	MAC01969
2.	Back Terminal: AVA31 and AVA33	AXL00301
		AXL00401
	Back Terminal: AVA32	AXL03004

Typical Tests Information:

The Relay Confirm to following standard		
Insulation Tests:		
Sr. No.	Standard	Test
1.	High Voltage Test	IEC 60255-27:2005
2.	Insulation Resistance	IEC 60255-27:2005
Environmental tests:		
3.	Cold test (Storage)	IEC 60068-2-1:2007; EN 60068-2-1:2007
4.	Cold test (Operational)	IEC 60068-2-1:2007; EN 60068-2-1:2007
5.	Dry heat test (Storage)	IEC 60068-2-2:2007; EN 60068-2-2:2007
6.	Dry heat test (Operational)	IEC 60068-2-2:2007; EN 60068-2-2:2007
Accuracy & Performance Test		
7.	Relay characteristics, Performance & Accuracy test	IEC 60255-151:2009
8.	Test of Power consumption	IEC 60255-1 :2009
Mechanical tests		
9.	Vibration Response Test	IEC 60255-21-1:1988; EN 60255-21-1:1996
10.	Shock Response Test	IEC 60255-21-2:1988; EN 60255-21-2:1996

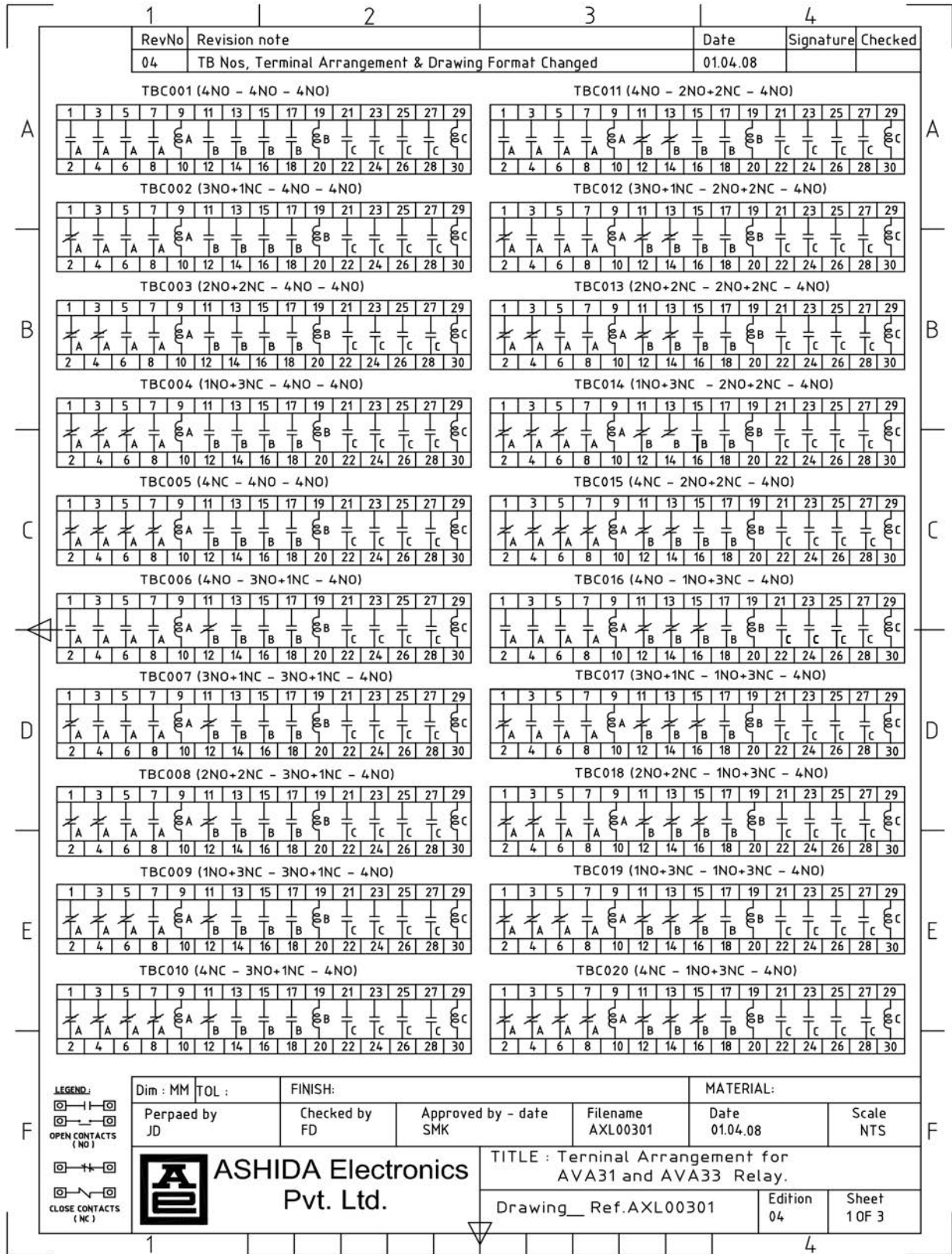
Note: Type test reports are available on request

Mechanical Dimensions :



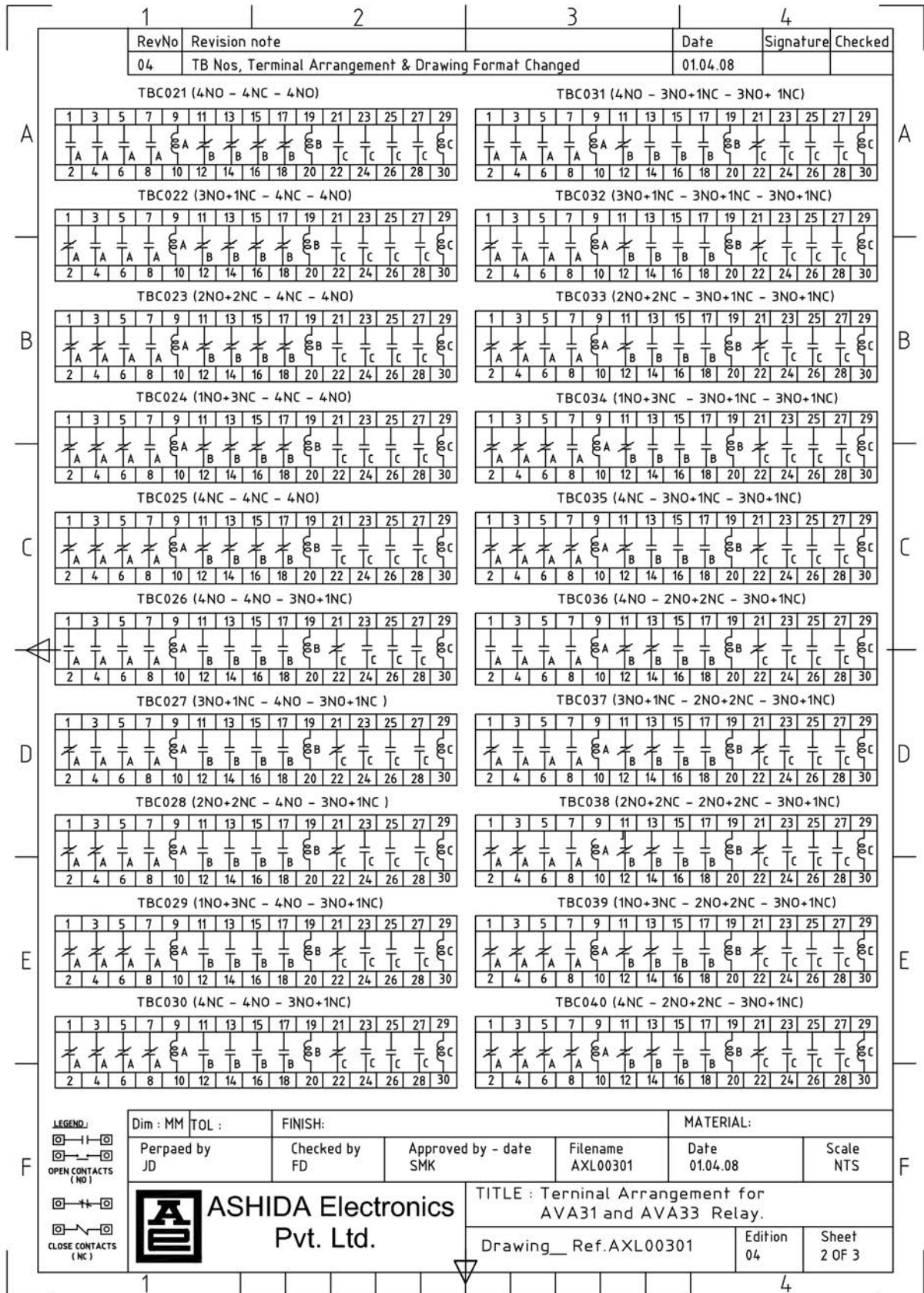
Back Terminal connection diagram :

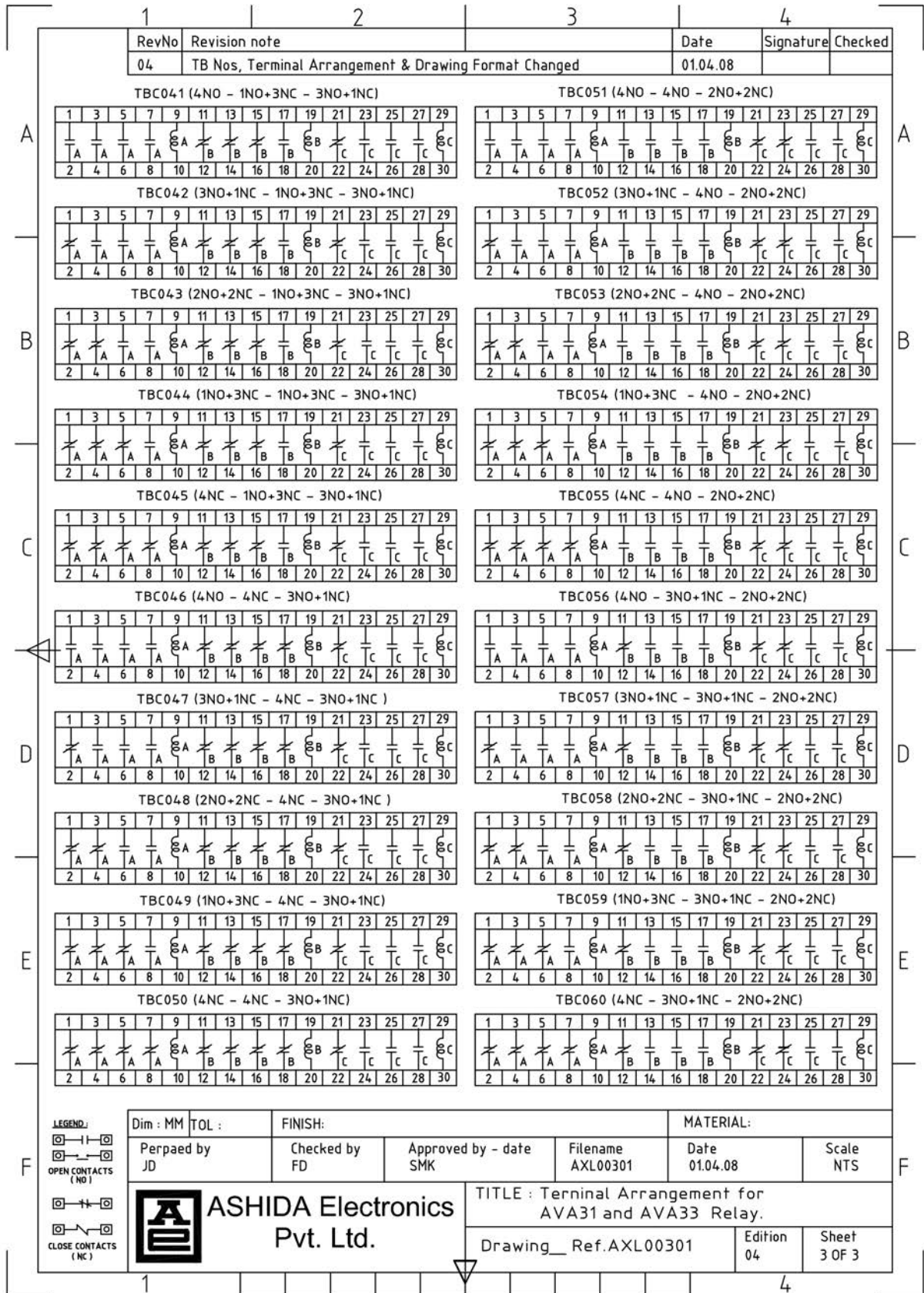
AVA31 and AVA33

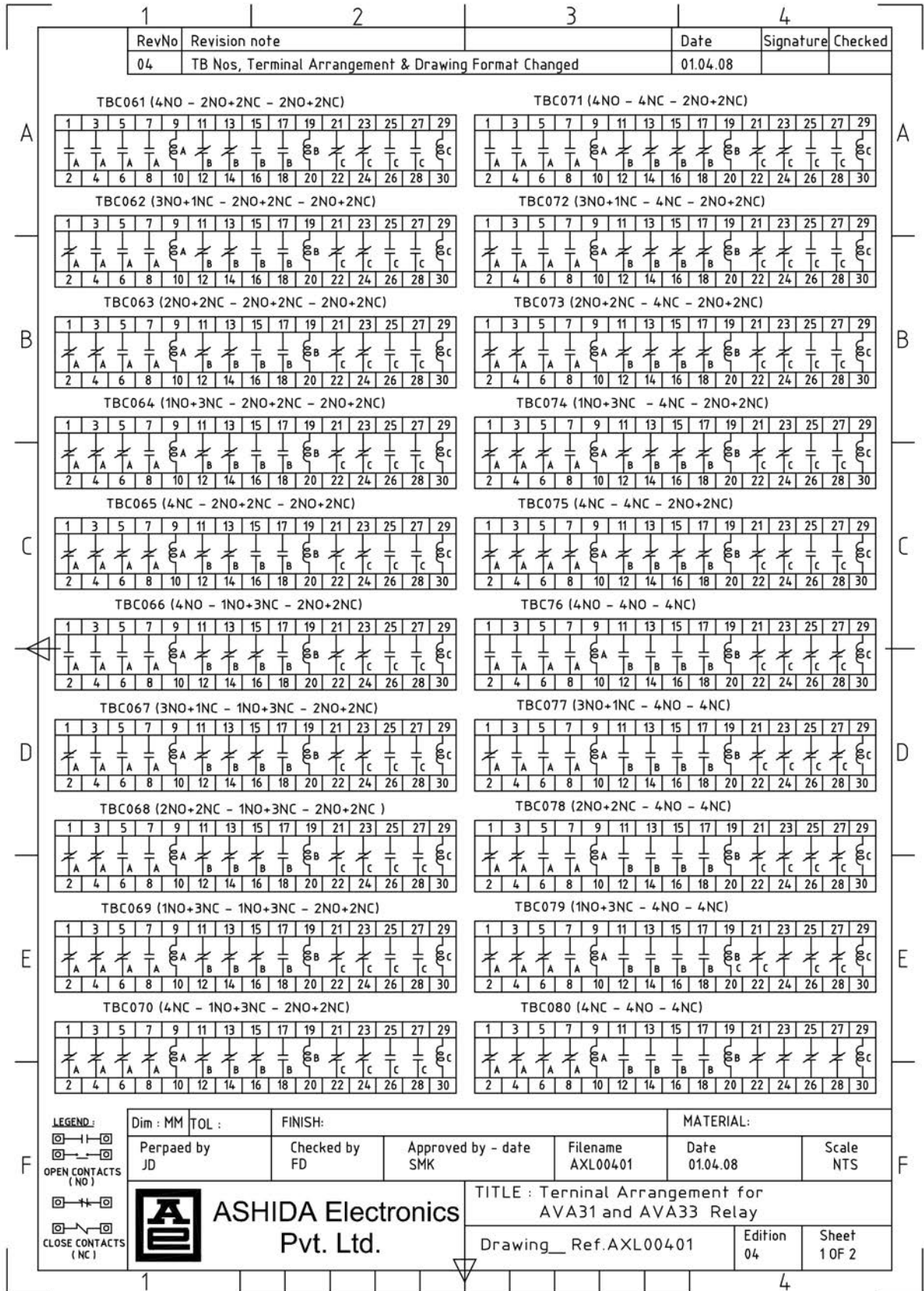


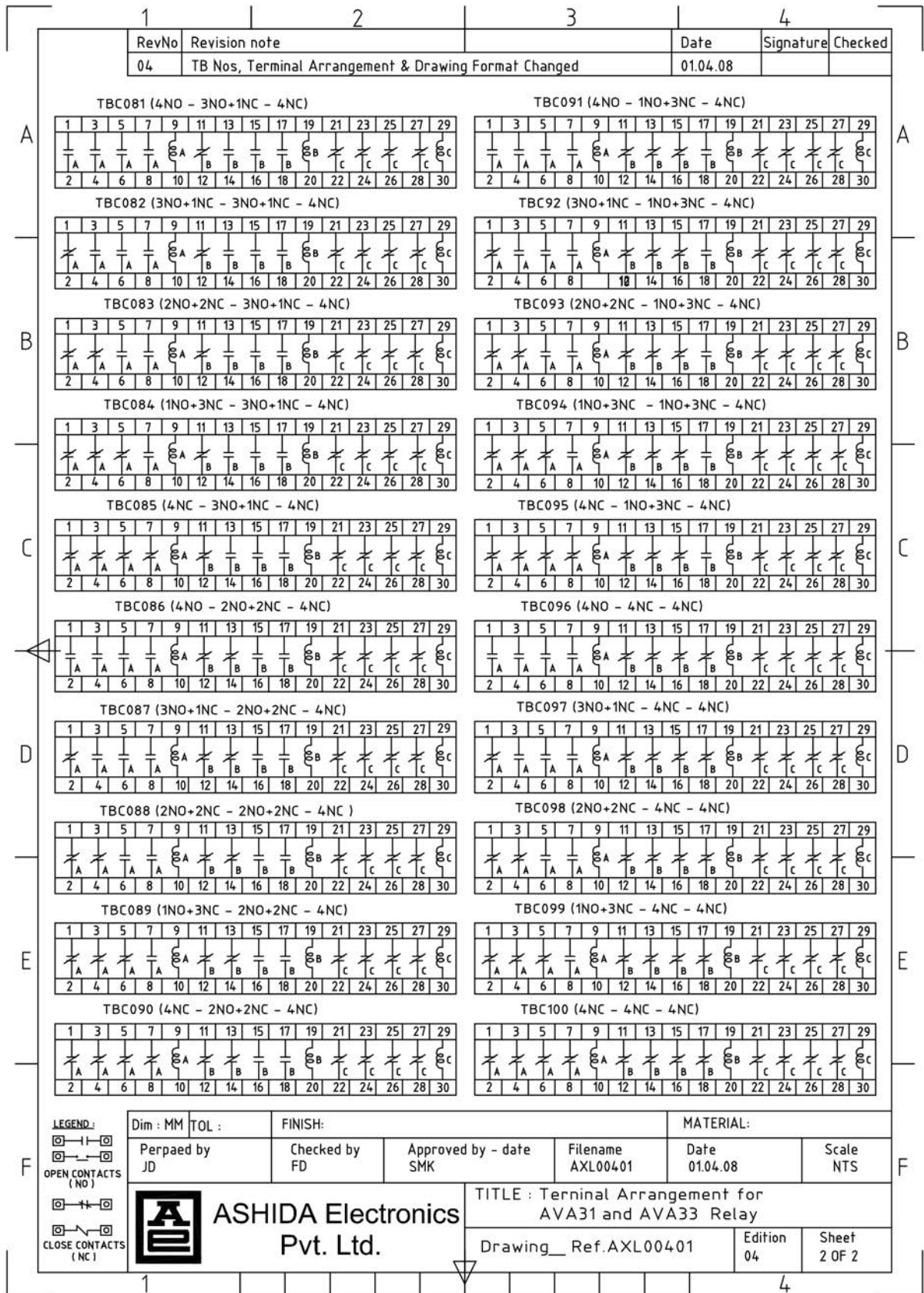
LEGEND:
 OPEN CONTACTS (NO)
 CLOSE CONTACTS (NC)

Dim : MM	TOL :	FINISH:			MATERIAL:		
Perpaed by JD	Checked by FD	Approved by - date SMK	Filename AXL00301	Date 01.04.08	Scale NTS		
ASHIDA Electronics Pvt. Ltd.			TITLE : Terninal Arrangement for AVA31 and AVA33 Relay.				
			Drawing_ Ref.AXL00301		Edition 04	Sheet 1 OF 3	

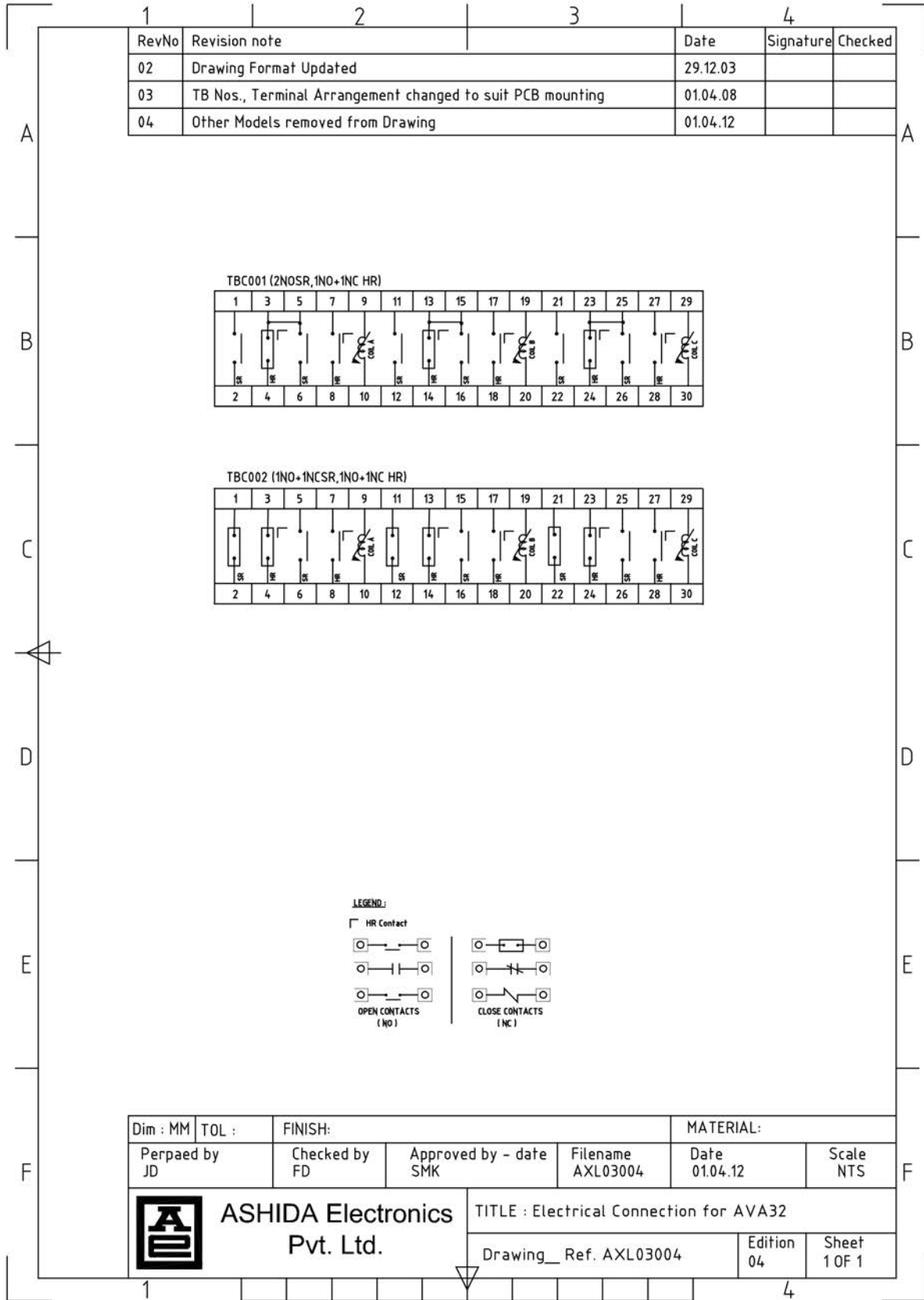








AVA32



Ordering Information:

AVA31

Ordering Information AVA31														
	1 - 3		4 - 5		6 - 7		8 - 9		10 - 11		12 - 13		14 - 15	
AVA 31 - AM	021	0	4	0	1	0	2	0	2	0	2	0	0	
Sub Type														
Using PCB, Without Flag	020													
Using PCB; HR Flag	021													
Using PCB; Reverse Flag	022													
Cabinet Size														
CSC-H (92 x 186 mm)		0	4											
Auxiliary Supply														
24/30 VDC				0	1									
110 VDC				0	4									
220 VDC				0	5									
Contacts- 1st Element (A)														
1NO + 3NC SR						2	2							
2NO + 2NC SR						2	5							
3NO + 1NC SR						2	7							
4NC SR						3	0							
4NO SR						3	3							
Contacts- 2nd Element (B)														
1NO + 3NC SR								2	2					
2NO + 2NC SR								2	5					
3NO + 1NC SR								2	7					
4NC SR								3	0					
4NO SR								3	3					
Contacts- 3rd Element (C)														
1NO + 3NC SR										2	2			
2NO + 2NC SR										2	5			
3NO + 1NC SR										2	7			
4NC SR										3	0			
4NO SR										3	3			
Contacts- 4th Element(D)														
Not Applicable												0	0	

AVA32

Ordering Information AVA32													
	1 - 3	4 - 5		6 - 7		8 - 9		10 - 11		12 - 13		14 - 15	
AVA 32 - AM	021	0	4	0	1	4	0	4	0	4	0	0	0
Sub Type													
Using PCB; HR Flag	021												
Cabinet Size													
CSC-H (92 x 186 mm)		0	4										
Auxiliary Supply													
24/30 VDC				0	1								
110 VDC				0	4								
220/230 VAC				2	5								
Contacts - 1st Element (A)													
2NO SR, 1NO + 1NC HR						4	0						
Contacts - 2nd Element (B)													
2NO SR, 1NO + 1NC HR								4	0				
Contacts - 3rd Element (C)													
2NO SR, 1NO + 1NC HR										4	0		
Contacts - 4th Element (D)													
Not Applicable												0	0

AVA33

Ordering Information AVA33																
	1 - 3		4 - 5		6 - 7		8 - 9		10 - 11		12 - 13		14 - 15			
AVA 33 - AM	0	2	1	0	4	0	1	0	2	0	2	0	2	0	0	
Sub Type																
Using PCB; HR Flag	021															
Cabinet Size																
CSC-H (92 x 186 mm)	0		4													
Auxiliary Supply																
24/30 VDC			0		1											
48 VDC			0		2											
110 VDC			0		4											
220 VDC			0		5											
110 VAC			2		4											
220/230 VAC			2		5											
Contacts- 1st Element (A)																
2NO + 2NC HR					0		2									
3NO + 1NC HR					0		4									
4NO HR					0		8									
Contacts- 2nd Element (B)																
2NO + 2NC HR							0		2							
3NO + 1NC HR							0		4							
4NO HR							0		8							
Contacts- 3rd Element (C)																
2NO + 2NC HR									0		2					
3NO + 1NC HR									0		4					
4NO HR									0		8					
Contacts- 4th Element(D)																
Not Applicable													0		0	

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