HIGH SPEED MASTER TRIP RELAY : AVAJH13 (HR CONTACTS)

Introduction:

ASHIDA has designed economical & reliable High Speed Master Trip Relays. The simple and compact construction of AVAJH13 relay is suitable for contact multiplication and Master Trip relay for CB. ASHIDA relays are known for reliability, performance and security. ASHIDA Master Trip relays are design for all condition and application.

AVAJH13 relay are provided with 7 numbers of Hand Reset type contacts with or without HR operational flag. The AVAJH13 relays are available in wide range of Auxiliary supply 24V, 30V, 48V, 60V, 110V and 220V DC, 110V and 230V AC. The nominal operating range of relay is 60% to 120% of rated voltage. The operating Time of relay is 10 – 15 ms at nominal rated voltage.

Features:

- Simple & reliable construction.
- Compact panel mounting case.
- Attracted armature type compact design with positive action.
- Contacts conform to IEC 60255, Duty: 1250 VA.

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Applications:

- High Speed Trip Duty Contacts.
- To multiply the contacts of Protection relay.
- Low burden sensitive relay.
- To serve as Master Trip relay in C.B. Control panels.

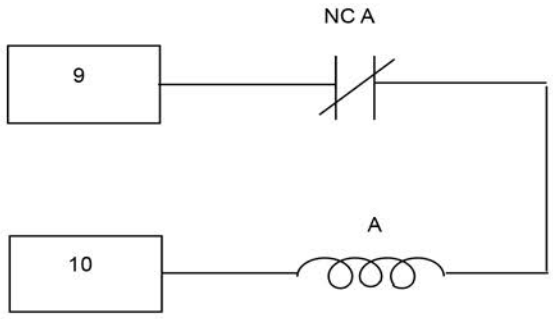
Available Contact Combination:

- 2NO + 3NC HR
- 3NO + 1NC HR
- 3NO + 2NC HR
- 4NO + 1NC HR
- 4NO + 3NC HR
- 5NO + 2NC HR
- 6NO + 1NC HR
- 7 NO HR

Operation:

The AVAJH13 relays are single element relays. The control coil of relay element is wired in series with NC contact of the same element (as shown below figure), which makes the coil operation momentary. After applying energizing voltage to coil terminal no. 9 & 10 the relay element operates, NO contact closes and NC contact opens.

The Mechanical flag locking makes relay contacts as normally operated type and on coil voltage application the relay contacts hold-on is removed.



Internal Wiring Diagram

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Installation:

AVAJH13 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.

AVAJH13 supports panel 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.

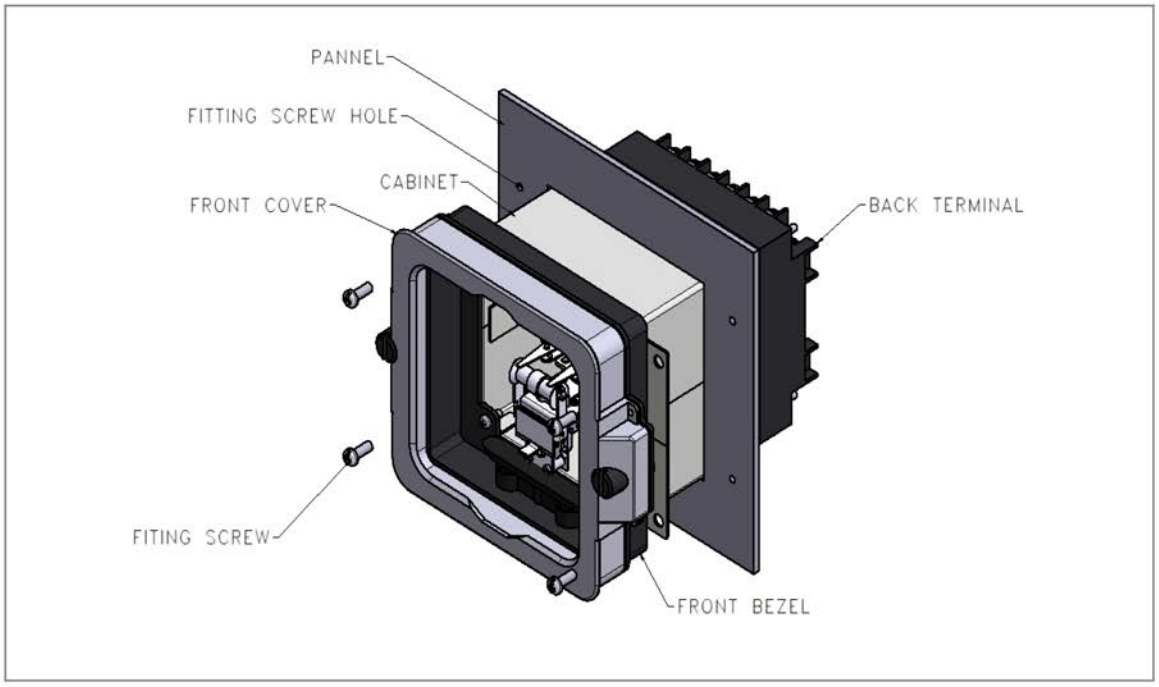

Figure 1: Inserting relay in to the panel cut-out

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

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

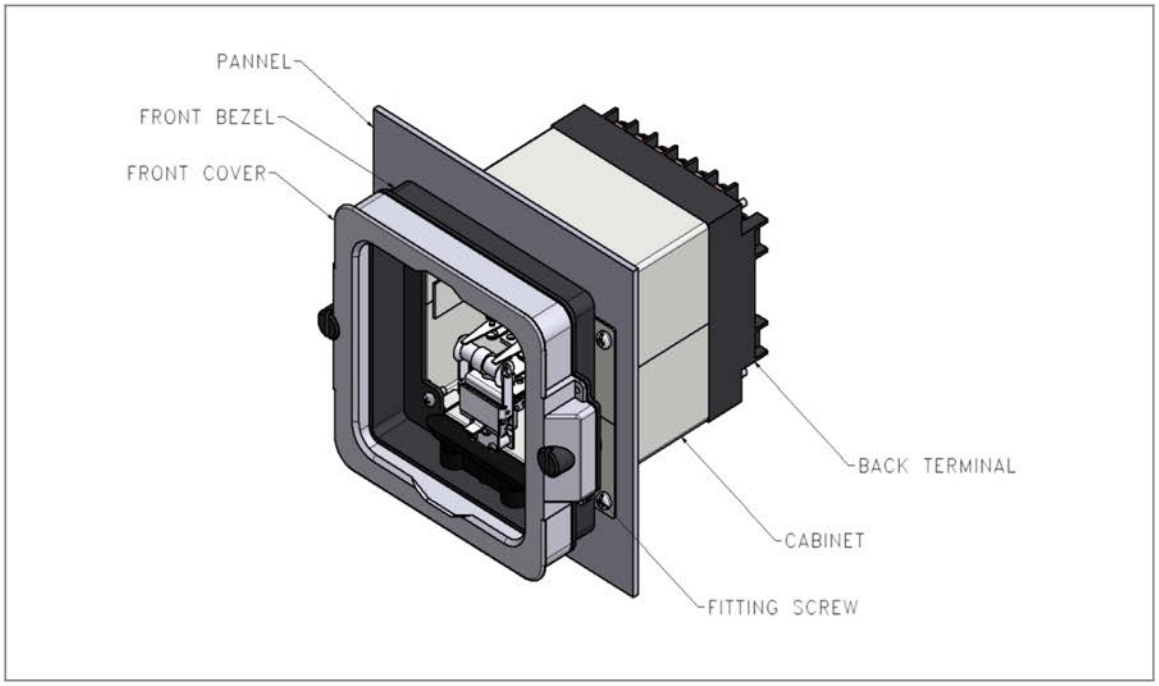

Figure 2: Relay mounted on the panel-front view

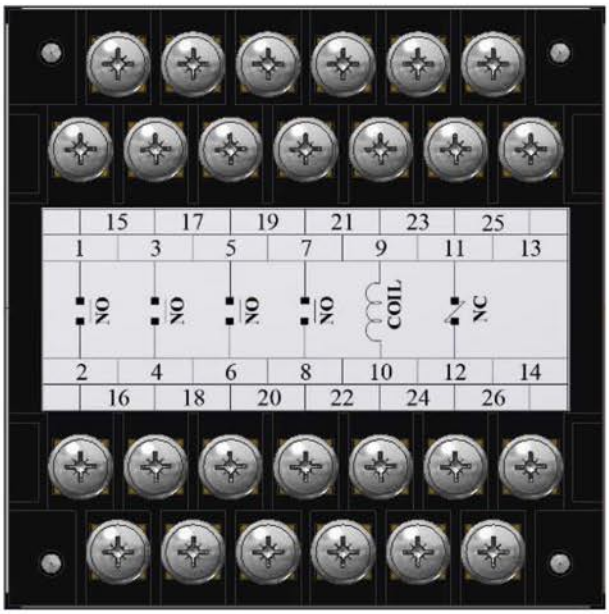

Figure 3: Relay back terminal view

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Relay Connection and Diagram

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:

Coil Ratings:		
Sr. No.	**Specification**	**Particulars**
1.	Coil Ratings	24 V/ 30 V/ 48 V/ 60 V/ 110 V/ 220 V DC and 110 V/ 220 V AC (Specify while ordering)
2.	Nominal Operating Range.	60% to 120% of rated operating voltage. 24V (14.4 – 28.8 V) 30V (18 – 36 V) 48V (28.8 – 57.6 V) 60V (36 – 72 V) 110V (66 – 132 V) 220V (132 – 264 V)
2.	Coil Burden	7 VA @ 24 V/ 30 V DC or AC 10 VA @ 110 V DC or AC 7 VA @ 220 V DC or AC

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Output Contacts:			
Sr. No.	**Specification**	**Particulars**	
1.	Output Contacts	Make & carry	: 1250 VA/W 5Amp & 660V AC/DC
		Make & carry for 3 sec	: 7500 VA/W 30Amp & 660V AC/DC
		Breaking capacity	: 1250 VA 5Amp & 660V AC : 100 W Resistive : 50 W Inductive 5A/660V DC
2.	Operating Time	: 10 - 15 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 ºC to +65 ºC
3.	Storage temperature range	: -25 ºC to +70 ºC.

Mechanical specification:		
1.	Design	Flush mounting case
2.	Weight	1.050 Kg approximate
3.	Case Dimensions	142.5 x 122.5 x 145 mm

Drawing Reference:

Drawing References:		
1.	For Cabinet Type	MAC01947
2.	Back Terminal	AXL00101

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Typical Tests Information:

The Relay Confirm to following standard		
Sr. No.	**Test**	**Standard**
1.	Functional Test	IEC 60255
2.	Power Frequency High Voltage Withstand Test	IEC 60255 - 5 Ed 2.0
3.	Impulse Voltage Test	IEC 60255 - 5 Ed 2.0
4.	Measurement of Accuracy of Specified Time Under Reference Condition	
4.1	Operating Time Test	IEC 60255 - 127
4.2	Temperature Rise Test	IEC 60255 - 1
4.3	Mechanical Endurance Test	IEC 60255 - 1
4.4	Contact Performance Test	IEC 60255 - 1
4.5	Making Capacity Test	IEC 60255 - 1
4.6	Breaking Capacity Test	IEC 60255 - 1
4.7	Short Time Current Withstand Test	IEC 60255 - 1
5.	Rated Burden For Auxiliary Supply	IEC 60255 - 1
6.	Thermal Withstand Test for Continuous Current Carrying Capacity	IEC 60255 - 1
7.	Dielectric Test	IEC 60255 - 5 Ed 2.0
8.	Insulation Resistance Test	IEC 60255 - 5 Ed 2.0
9.	Vibration Response Test	IEC 60255 - 21 - 1
10.	Shock Response Test	IEC 60255 - 21 - 1
11.	Dry Heat Storage Test	IEC 60255 - 21 - 1
12.	Dry Heat Operational Test	IEC 60255 - 21 - 1
13.	Cold Storage Test	IEC 60255 - 21 - 1
14.	Cold Operational Test	IEC 60255 - 21 - 1

Note: Type test reports are available on request

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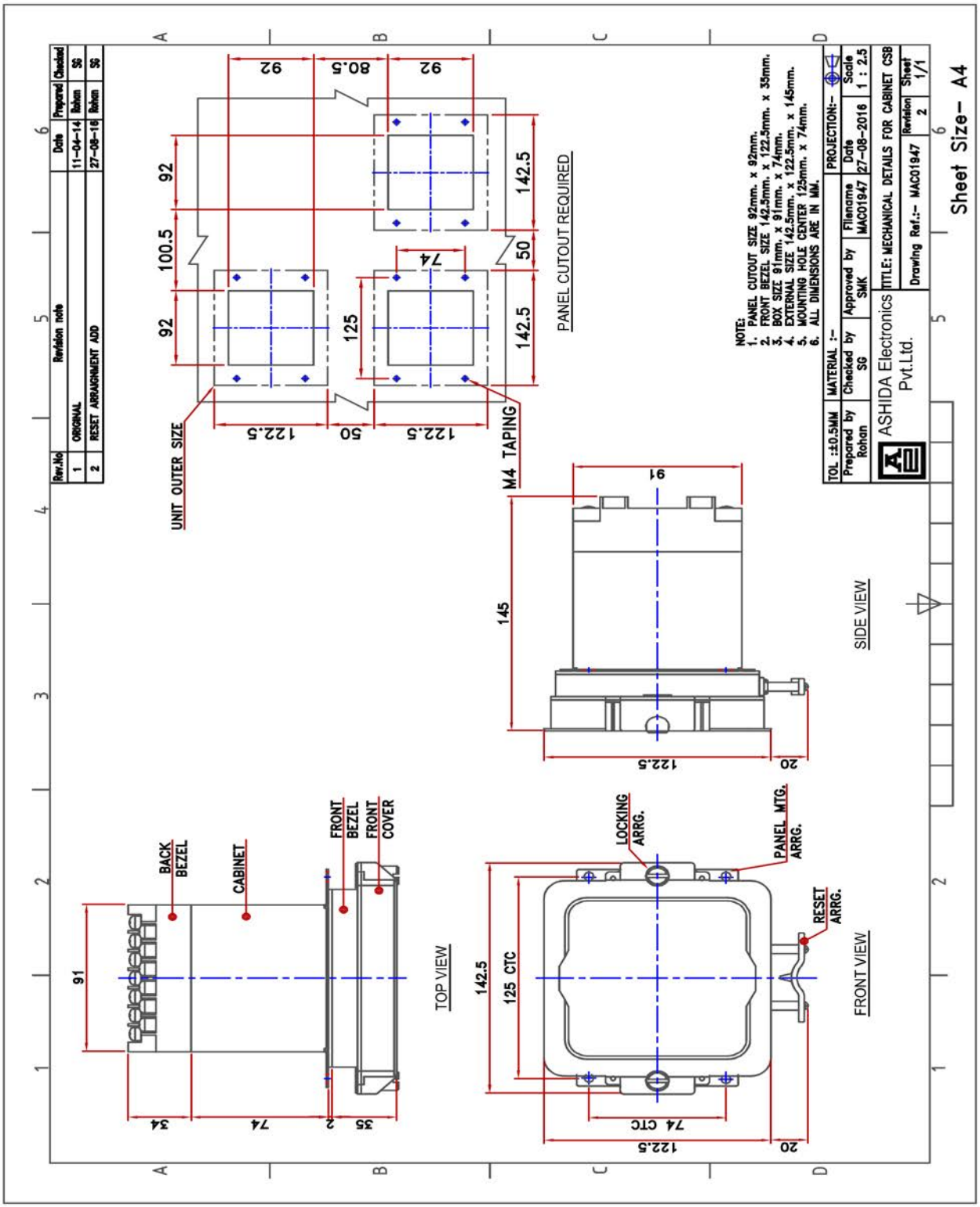
Mechanical Dimensions



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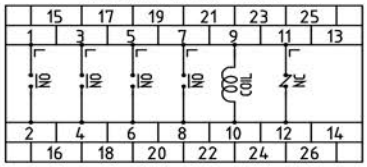
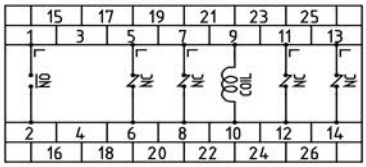
Back Terminal connection diagram

RevNo	Revision note	Date	Signature	Checked
04	TB Nos, Terminal Arrangement & Drawing Format Changed	01.04.08		
05	TB Nos, Terminal Arrangement Changed as per the new bezel	01.10.11		

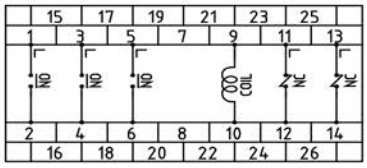
TBB001 (4NO-1NC)



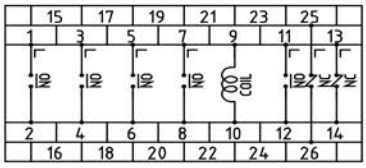
TBB004 (1NO-4NC)



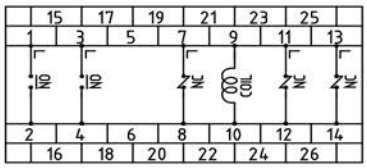
TBB002 (3NO-2NC)



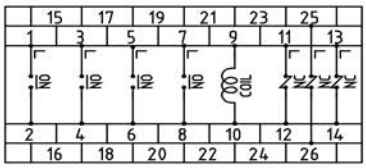
TBB005 (5NO-2NC)



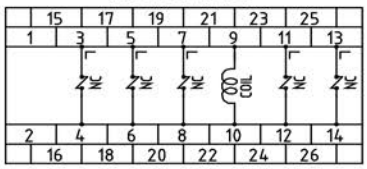
TBB003 (2NO-3NC)



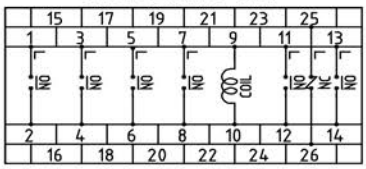
TBB006 (4NO-3NC)



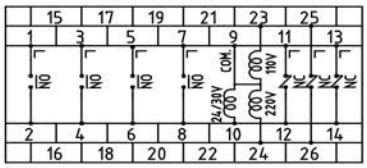
TBB007 (5NC)



TBB008 (6NO-1NC)

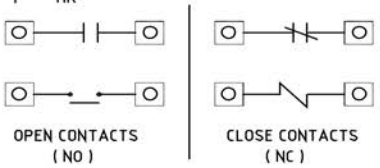


TBB009 (4NO-3NC)



Note:
Relay is only available with 4NO – 3NC
Contact combination in selectable supply model
and the Supply is available in DC only.

LEGEND :



Dim : MM	TOL :	FINISH:		MATERIAL:	
Perpaed by PD	Checked by PD	Approved by – date SMK	Filename AXL00101	Date 01.10.11	Scale NTS

ASHIDA Electronics Pvt. Ltd.

TITLE : Back Terminal Details for AVAJH13 Relay

Drawing__ Ref. AXL00101 | Edition 05 | Sheet 1 OF 1

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Ordering Information:

Ordering Information													
	1 - 3	4 - 5		6 - 7		8 - 9		10 - 11		12 - 13		14 - 15	
AVAJH13 - AM	**XXX**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**	**X**
AVAJH13 - AM	011	0	3	0	1	0	3	0	0	0	0	0	0
Sub Type													
Using Terminal Bezel with HR Flag	011												
Using Terminal bezel with HR Flag; Using OLD Facia	013												
Cabinet Size													
CSB (92 x 92 mm)		0	3										
Auxiliary Supply													
24/30 VDC				0	1								
48 VDC				0	2								
60 VDC				0	3								
110 VDC				0	4								
220 VDC				0	5								
110 VAC				2	4								
220/ 230 VAC				2	5								
Contacts- 1st Element (A)													
2NO + 3NC HR						0	3						
3NO + 1NC HR						0	4						
3NO + 2NC HR						0	5						
4NO + 1NC HR						0	6						
4NO + 3NC HR						0	7						
5NO + 2NC HR						0	9						
6NO + 1NC HR						1	1						
7 NO HR						6	9						
Contacts- 2nd Element (B)													
Not Applicable								0	0				
Contacts- 3rd Element (C)													
Not Applicable										0	0		
Contacts- 4th Element(D)													
Not Applicable												0	0

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