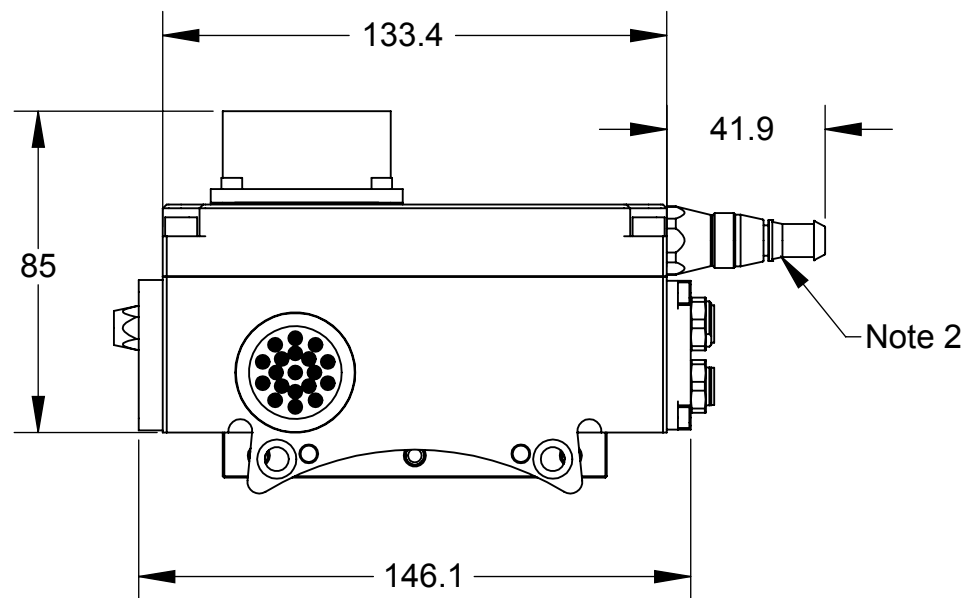
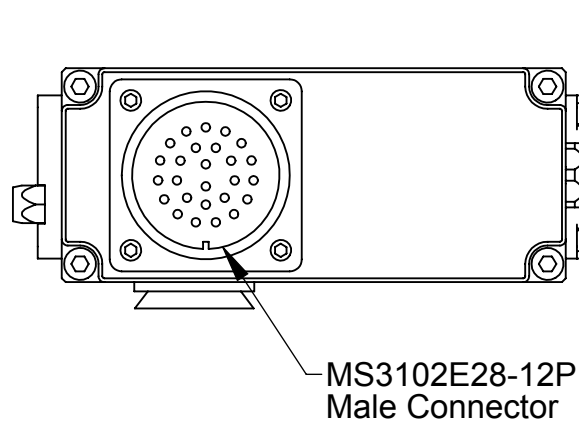


### "DANGER!" - Electrical Shock Hazard

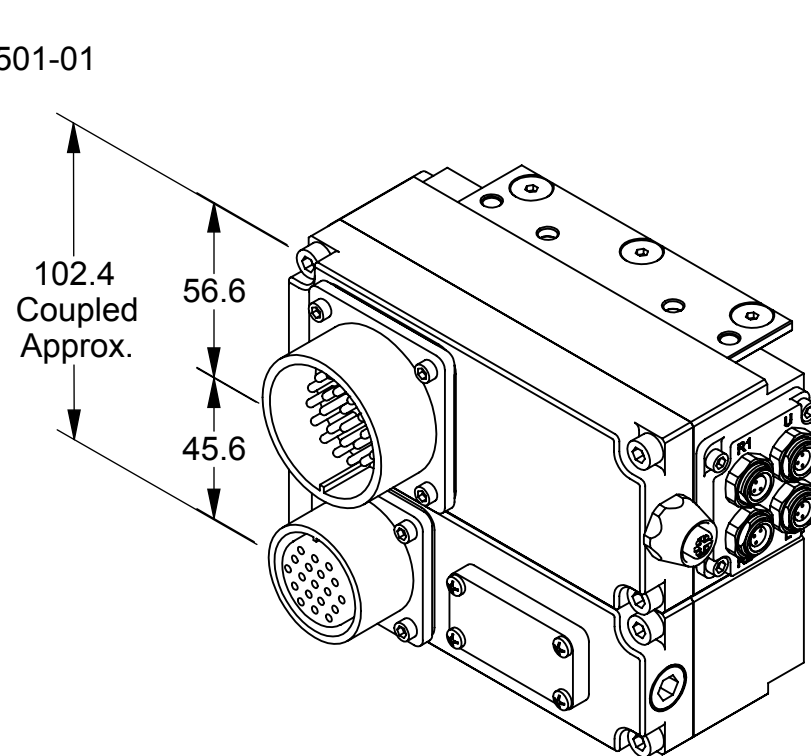
This module has a Voltage of 50V or greater, NO contact should be attempted before removing power. This especially includes separation or insertion of the mating connectors or any contact with the tool changer or its components.

Rev.	Description	Initiator	Date
04	Eco 13646; Removed Tool Cleat Assembly from model and drawing. Added Electrical Shock Hazard Note.	CF	1/21/2016

VA2 Master Module  
(9121-VA2-M)



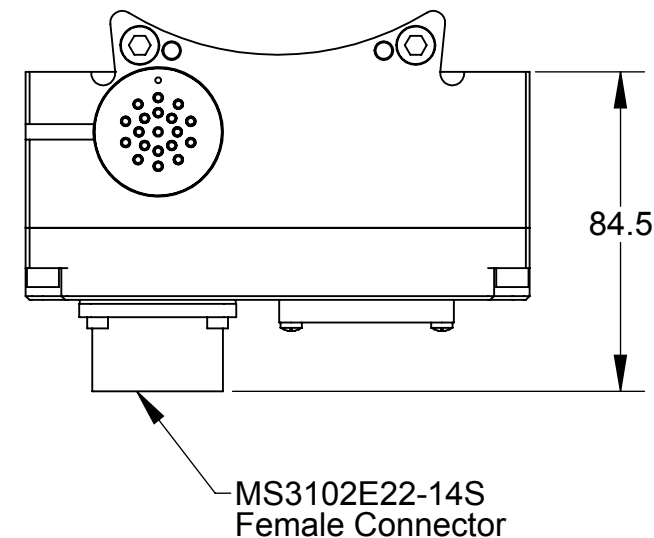
### VA2-M/SA7-T Dimensions



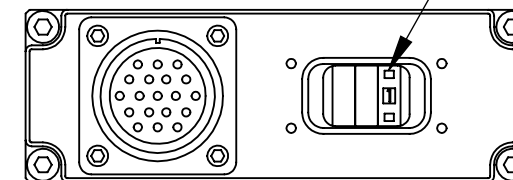
#### Notes:

1. Sheet Configurations  
Sheet 1: VA2-M/SA7-T Dimensions  
Sheet 2: VA2-M/SA7-T Serviceable Parts  
Sheet 3: VA2 Master with SA7 Tool (0-9 Tool ID)
2. Teach Plug is not connected to the Tool Stand Interlock (TSI) connector. Item is bagged separately.

SA7 Tool Module  
(9121-SA7-T)



Tool ID Switch  
Accessible Through Window  
(Window Not Shown for Clarity)



NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.



3rd ANGLE PROJECTION



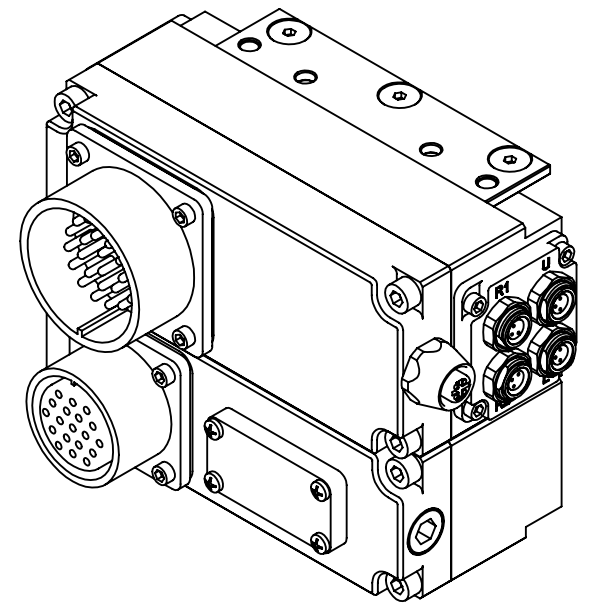
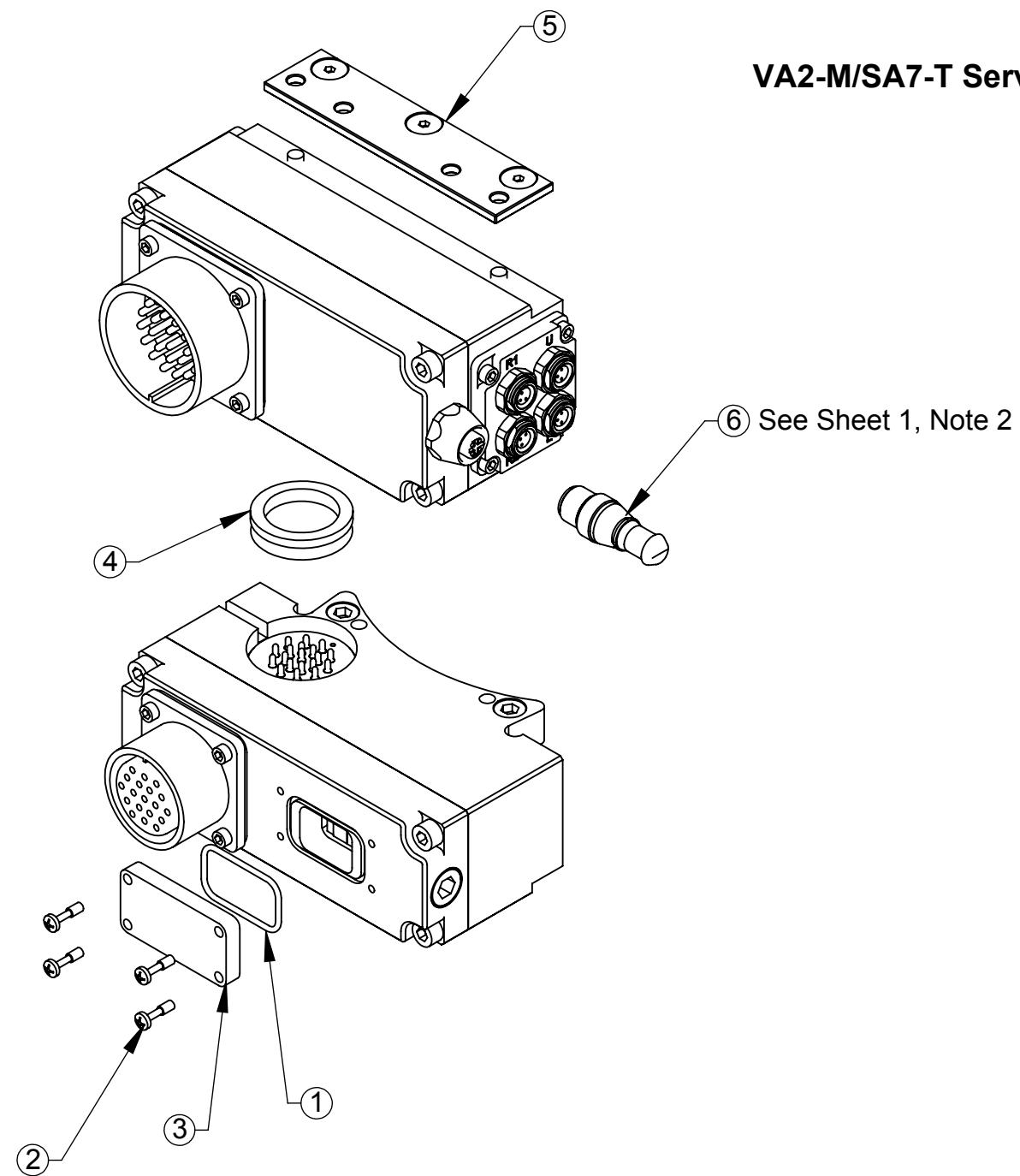
1031 Goodworth Drive, Apex, NC 27539, USA  
Tel: +1.919.772.0115 Email: info@ati-ia.com  
Fax: +1.919.772.8259 www.ati-ia.com  
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DRAWN BY: C.Flesock, 5/9/2007		TITLE	
CHECKED BY: R. Heavner, 5/9/2007		VA2-M/SA7-T Customer Drawing	
PROJECT #	-----	SCALE	1:2
SHEET	1 OF 3	SIZE	B
DRAWING NUMBER		REVISION	
9630-20-VA2M SA7T		04	

Rev.	Description	Initiator	Date
-	See Sheet1	-	-

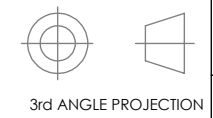
### VA2-M/SA7-T Serviceable Parts



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	3410-0001092-01	O-ring AS568-023
2	4	3500-9957012-21	CAPTIVE SCREW M3 X 12 SLOTTED HEAD SS
3	1	3700-20-2696	Thick Window for DP/DE45 Master
4	1	4010-0000030-01	V-Ring Seal
5	1	9005-20-1198	Master Cleat Sub-Assembly
6	1	9120-DE45-PLUG	Yellow Teach Plug w/ Lanyard and Caution Tags

NOTES: UNLESS OTHERWISE SPECIFIED.

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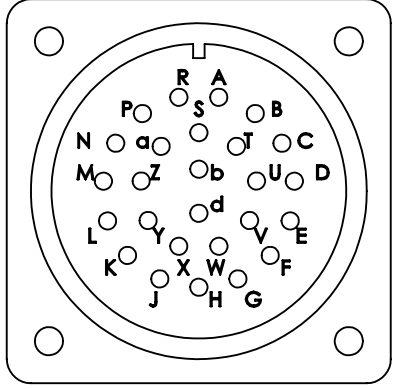
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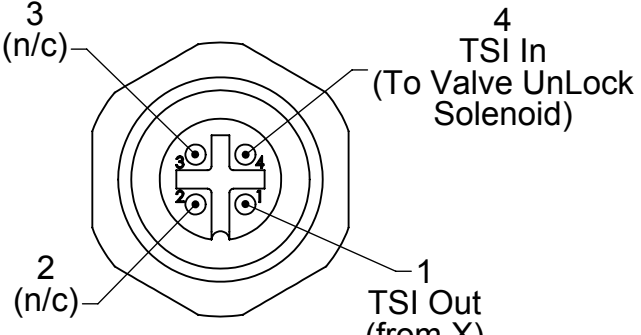
DRAWN BY: C.Flesock, 5/9/2007		TITLE	
CHECKED BY: R. Heavner, 5/9/2007		VA2-M/SA7-T Customer Drawing	
PROJECT #	-----	SCALE	1:2
SHEET	2 OF 3	SIZE	B
		DRAWING NUMBER	9630-20-VA2M SA7T
			REVISION
			04

Rev.	Description	Initiator	Date
-	See Sheet1	-	-

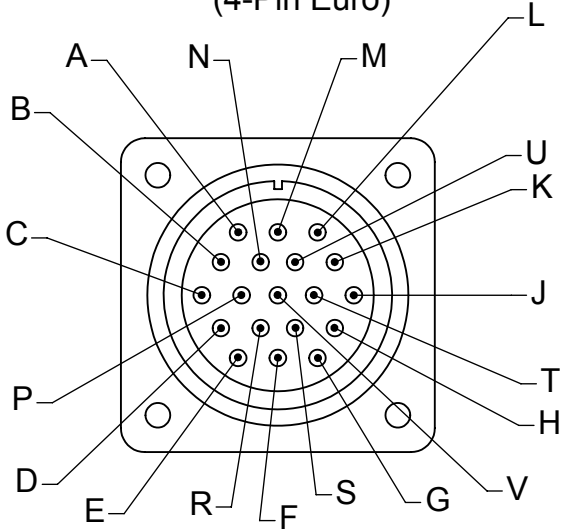
**VA2 Master with SA7 Tool**



Amphenol Connector  
Master Side  
MS3102E28-12P  
Face View  
Scale 1:1



TSI Connector  
VA2 Master Side  
Scale 2:1  
(4-Pin Euro)



Amphenol Connector  
Tool Side  
MS3102E22-14S  
Face View  
Scale 1:1

**General Notes:**

- Pin A is first mate and last break during a tool change and is specified for use as 0 VDC and/or ground service.
- The common for Tool ID is tied into the 0 VDC line (Pin A). The Tool ID switches are Rated for service at 50V and 100 mA max. Refer to the Tool ID table for switch setup information.

VA2 Master MS3102A28-15P Male Connector	VA2-M to SA7-T Pin Out	SA7 Tool MS3102E22-14S Female Connector
0 Vdc Reference	A ----- >> -----	A 0 Vdc Reference
24 Vdc (I/P)	B ----- >> -----	24 Vdc (I/P)
available	C ----- >> -----	available
available	D ----- >> -----	available
available	E ----- >> -----	available
available	F ----- >> -----	available
available	G ----- >> -----	available
available	H ----- >> -----	available
available	J ----- >> -----	available
available	K ----- >> -----	available
available	L ----- >> -----	available
available	M ----- >> -----	available
available	N ----- >> -----	available
available	P ----- >> -----	available
available	R ----- >> -----	available
Tool ID, Bit Value 8	S ----- >> -----	S not available
Tool ID, Bit Value 4	T ----- >> -----	T not available
Tool ID, Bit Value 2	U ----- >> -----	U not available
Tool ID, Bit Value 1	V ----- >> -----	V not available
Lock O/P	W -----	
(1) TSI Connection	X -----	
not available	Y -----	
RTL #1	Z -----	
RTL #2	a -----	
Lock I/P	b -----	
Unlock I/P	d -----	

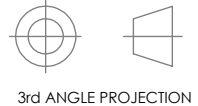
Controller Outputs		
Pin:	Signal:	Description:
A	0 VDC	Voltage Reference
B	24 VDC	Voltage Supply
W	24 VDC	Lock Solenoid Supply (Double Solenoid)
X	24 VDC	UnLock Solenoid Supply
Controller Inputs		
Pin:	Signal:	Description:
S	Tool ID	Bit Value 8 (See Table)
T	Tool ID	Bit Value 4 (See Table)
U	Tool ID	Bit Value 2 (See Table)
V	Tool ID	Bit Value 1 (See Table)
Z	RTL #1	Ready-To-Lock Input #1
a	RTL #2	Ready-To-Lock Input #2
b	Lock	Tool Changer Lock Input
d	Unlock	Tool Changer Unlock Input

Switch 1	Pin "S"	Pin "T"	Pin "U"	Pin "V"
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1

3. The VA2-M is supplied with a Teach Plug (part # 9120-DE45-PLUG) to make the TSI circuit (Pin 1 to Pin 4 on TSI Connector). It is recommended that the customer integrate a mechanical limit switch to use with this circuit. The limit switch would be mounted to indicate that the robot and tool changer are in the stand, thus making the circuit and only allowing the tool changer to uncouple while in the stand. Contact ATI for further assistance.

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DRAWN BY: C.Flesock, 5/9/2007		TITLE	
CHECKED BY: R. Heavner, 5/9/2007		VA2-M/SA7-T Customer Drawing	
PROJECT # -----	SHEET 3 OF 3	SCALE	SIZE
		1:2	B
DRAWING NUMBER		REVISION	
9630-20-VA2M SA7T		04	