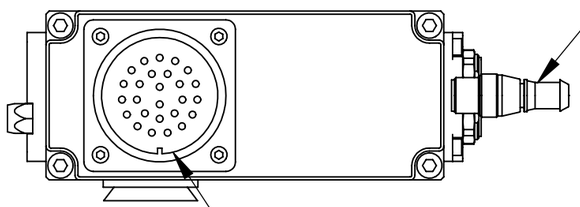
Rev.	Description	Initiator	Date
05	Eco 21823; Updated Tool ID window and hardware.	LJH	4/29/2026

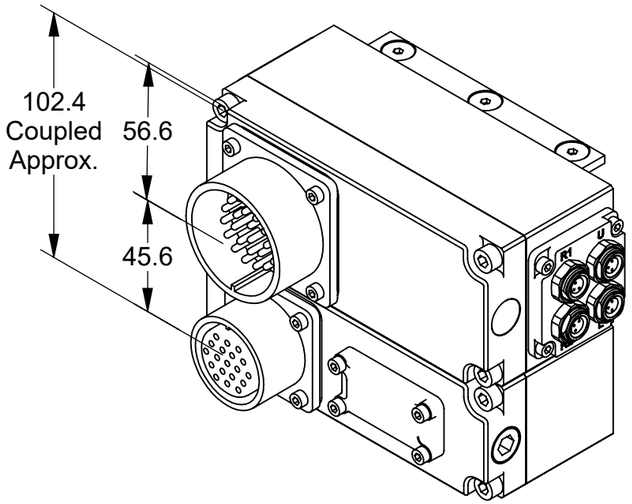
"DANGER!" - Electrical Shock Hazard

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.

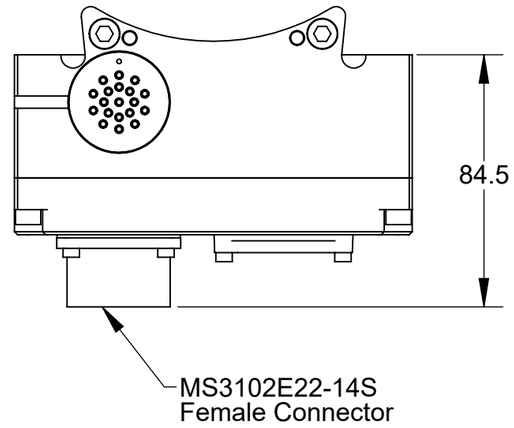
VA2-M/SA7-T Dimensions

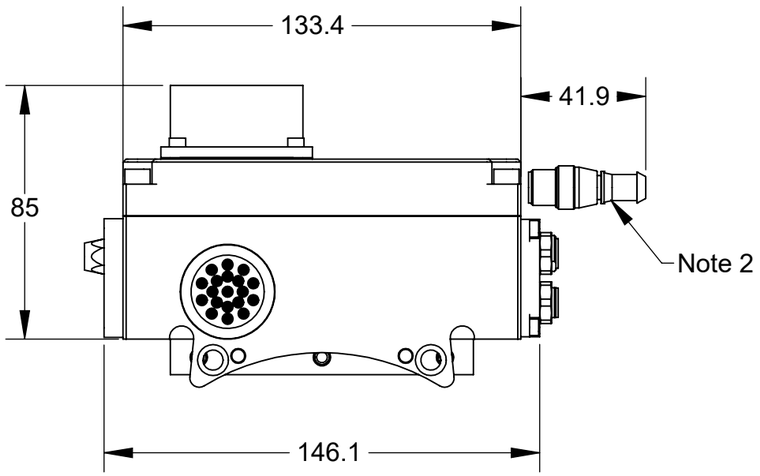
VA2 Master Module
(9121-VA2-M)



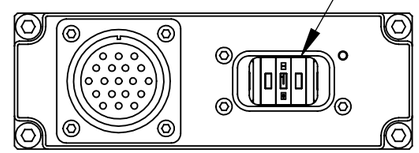


SA7 Tool Module
(9121-SA7-T)





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



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.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

ATI INDUSTRIAL AUTOMATION

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
ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

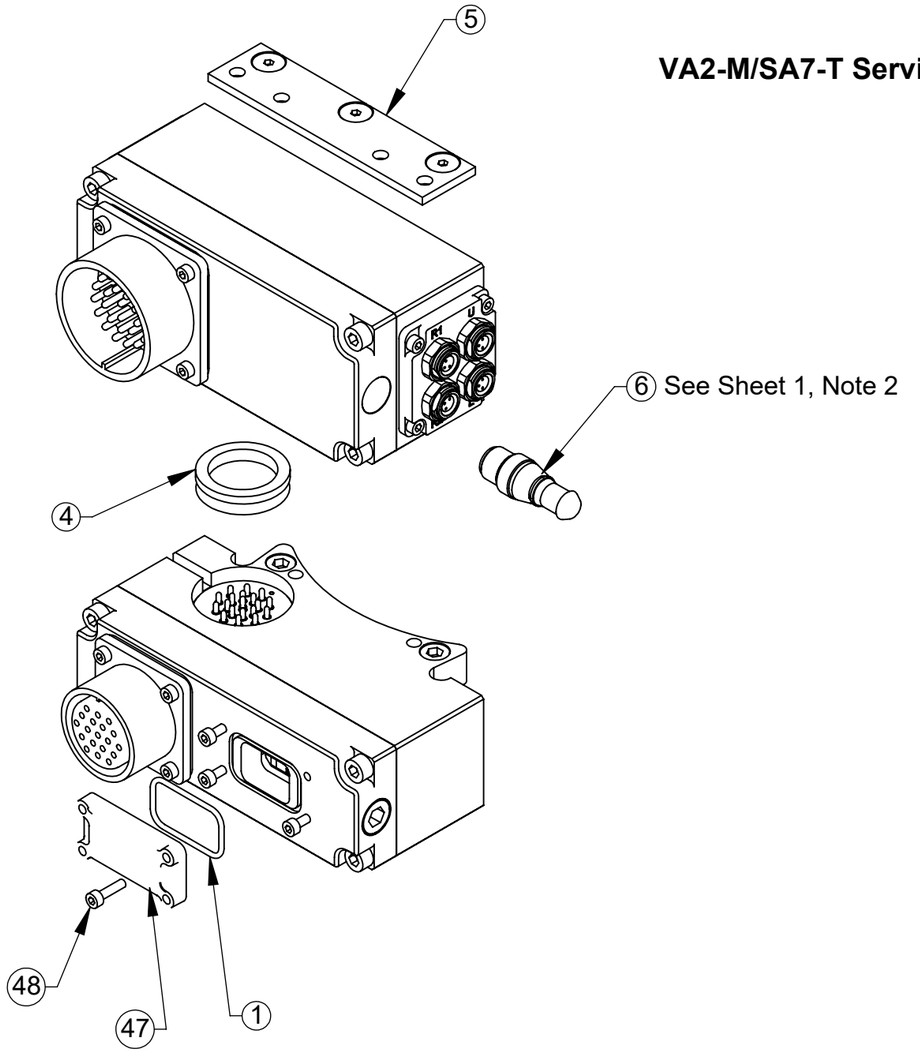
DRAWN BY: C.Flesock, 5/9/2007

CHECKED BY: R. Heavner, 5/9/2007

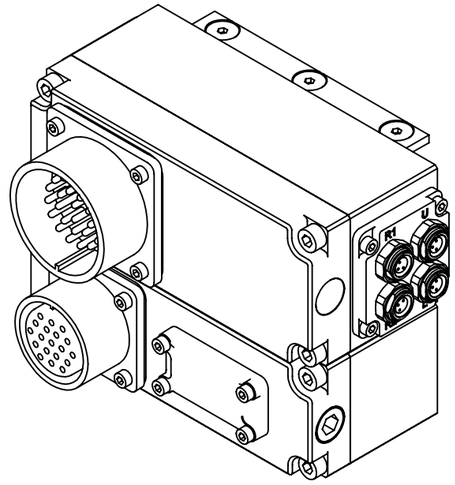
PROJECT # -------- SHEET 1 OF 3

TITLE: VA2-M/SA7-T Customer Drawing

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-VA2M SA7T	05



VA2-M/SA7-T Serviceable Parts



ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	3410-0001092-01	O-ring AS568-023
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
47	1	3700-20-11881	Thick Window for DP/DE45 Master, Injection Molded
48	4	3500-1058012-15	M3-0.5 x 12mm SHCS, Blue

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

ATI INDUSTRIAL AUTOMATION

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
ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

DRAWN BY: C.Flesock, 5/9/2007

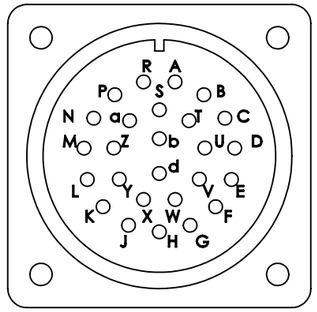
CHECKED BY: R. Heavner, 5/9/2007

PROJECT # -------- SHEET 2 OF 3

TITLE: VA2-M/SA7-T Customer Drawing

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-VA2M SA7T	05

VA2 Master with SA7 Tool



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

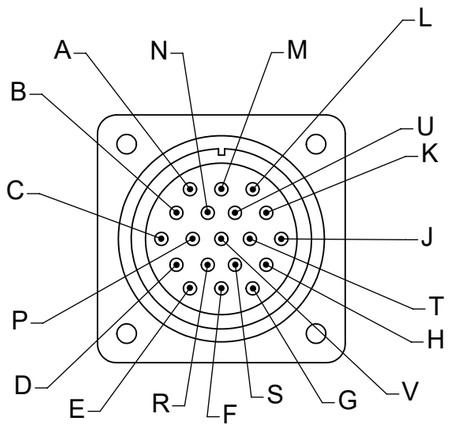
VA2-M to SA7-T Pin Out

VA2 Master MS3102A28-15P Male Connector			SA7 Tool MS3102E22-14S Female Connector	
0 Vdc Reference	A	>>	A	0 Vdc Reference
24 Vdc (I/P)	B	>>	B	24 Vdc (I/P)
available	C	>>	C	available
available	D	>>	D	available
available	E	>>	E	available
available	F	>>	F	available
available	G	>>	G	available
available	H	>>	H	available
available	J	>>	J	available
available	K	>>	K	available
available	L	>>	L	available
available	M	>>	M	available
available	N	>>	N	available
available	P	>>	P	available
available	R	>>	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			

Tool ID 0-9

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



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

General Notes:

1. Pin A is first mate and last break during a tool change and is specified for use as 0 VDC and/or ground service.
2. 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.
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.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

ATI INDUSTRIAL AUTOMATION

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
ISO 9001 Registered Company

PROPERTY OF ATI INDUSTRIAL AUTOMATION, INC. NOT TO BE REPRODUCED IN ANY MANNER EXCEPT ON ORDER OR WITH PRIOR WRITTEN AUTHORIZATION OF ATI.

DRAWN BY: C.Flesock, 5/9/2007

CHECKED BY: R. Heavner, 5/9/2007

PROJECT # -------- SHEET 3 OF 3

TITLE: VA2-M/SA7-T Customer Drawing

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-VA2M SA7T	05