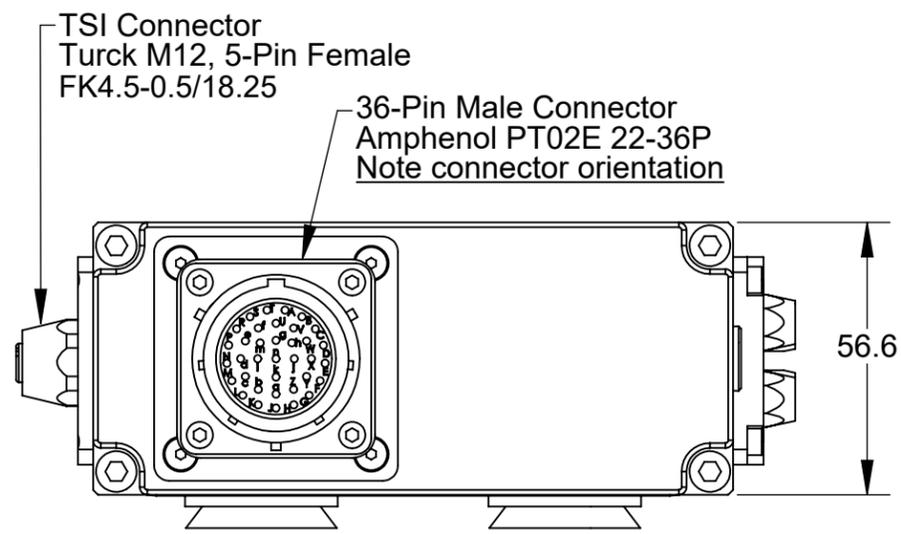
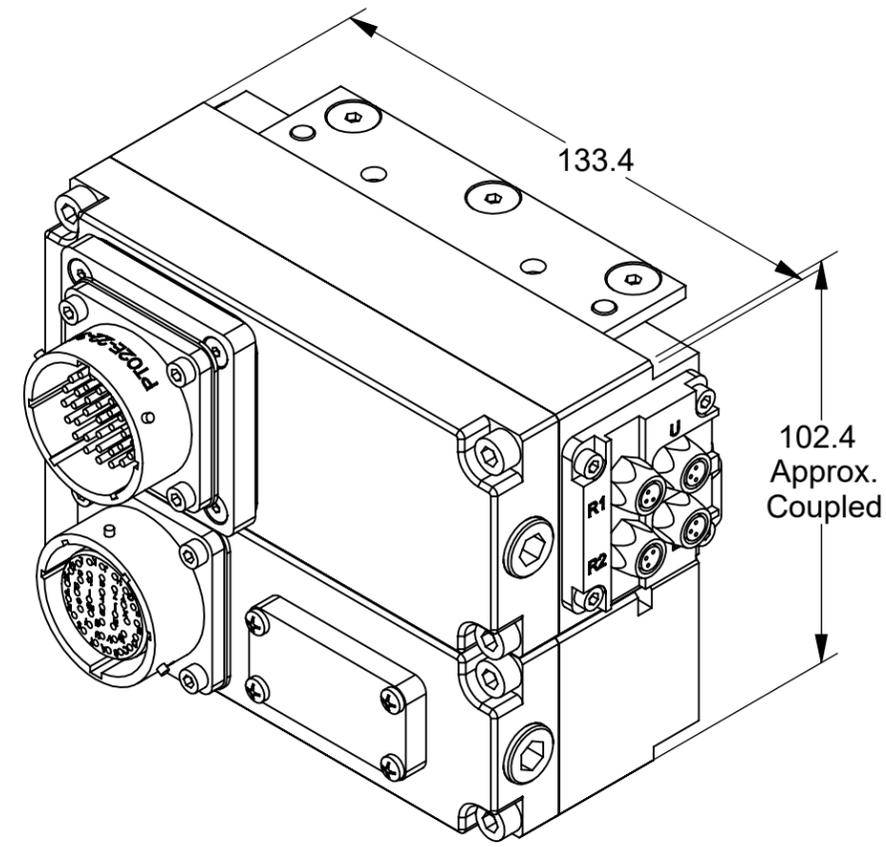


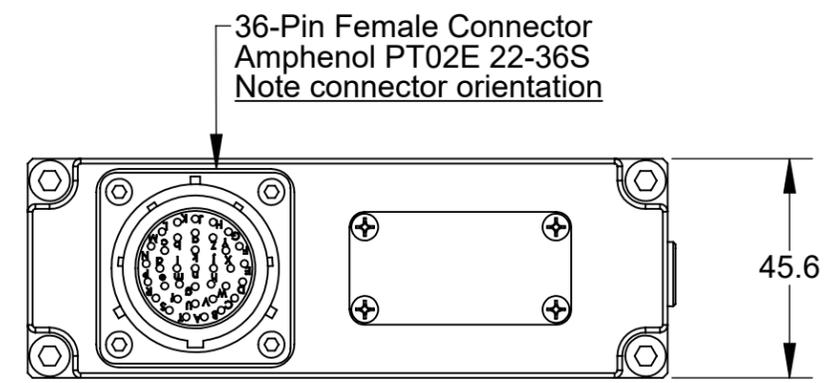
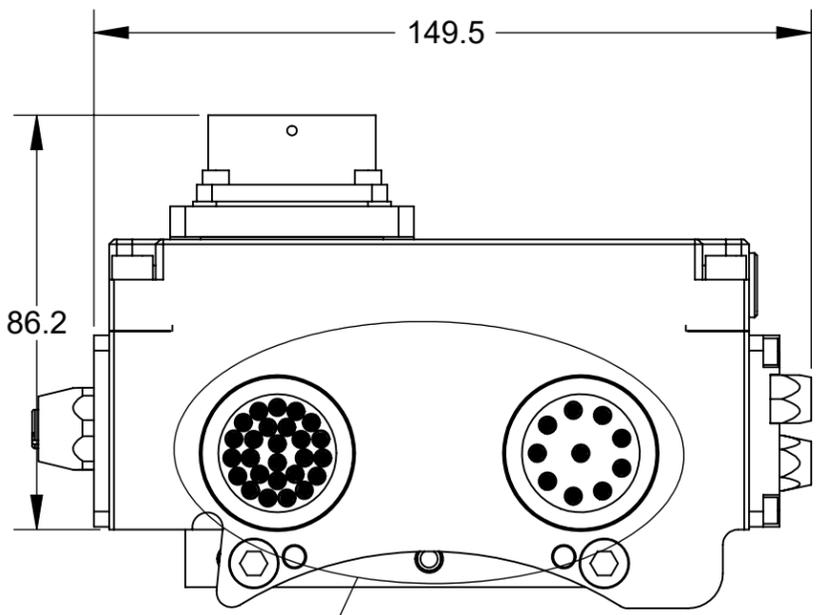
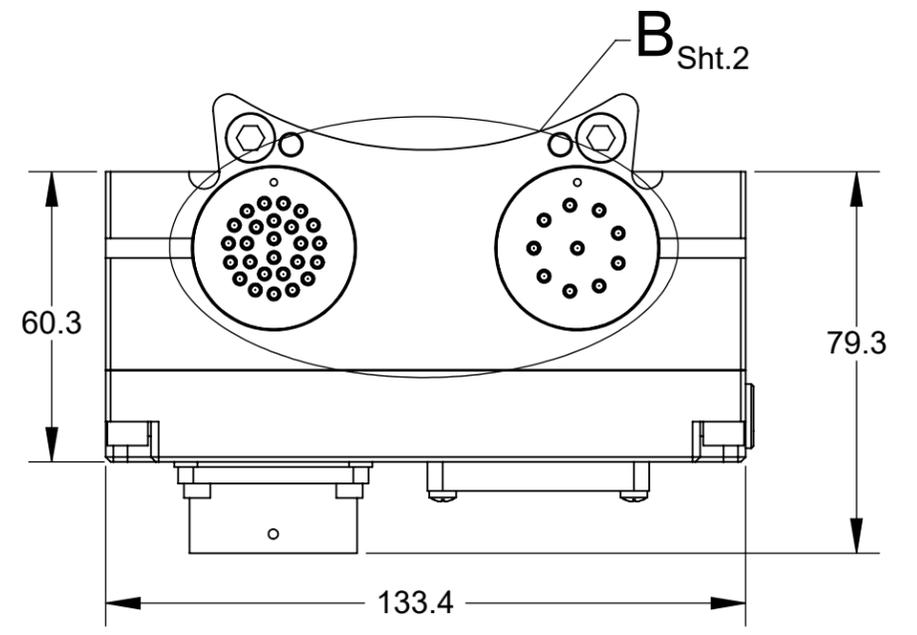
Rev.	Description	Initiator	Date
08	ECO 19320; Removed revision tables from sheets 2-5. Sheet 2 removed leaders from Pin ID numbers for pin blocks. Sheet 3 removed 9005-20-1199 callout	DS	9/14/2020



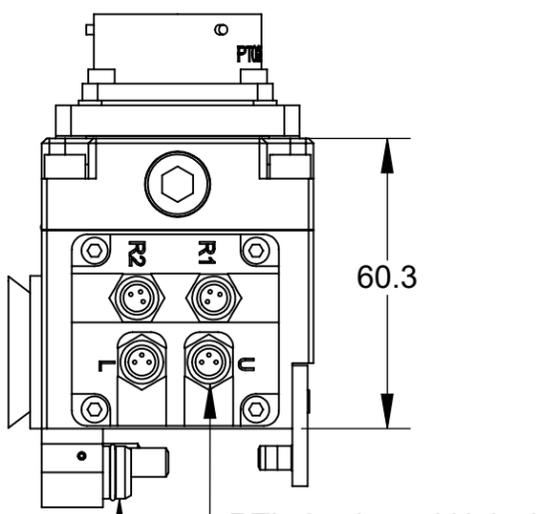
**9121-VB12-M**



**VB12 Master and Tool  
Coupled**



**9121-VB12-T**



Valve Signal Pin Block  
See Sheet 2 (Table 3)  
for Details

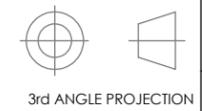
RTL, Lock, and Unlock  
Sensor Connectors  
4X Turck MFKS 3

- Notes:
1. Pin Block pin assignment information on Sheet 2.
  2. Connector details and pin assignment information on Sheet 3.
  3. Electrical schematic and functional notes on Sheets 4 and 5.

A<sub>Sht.2</sub>

NOTES: UNLESS OTHERWISE SPECIFIED.

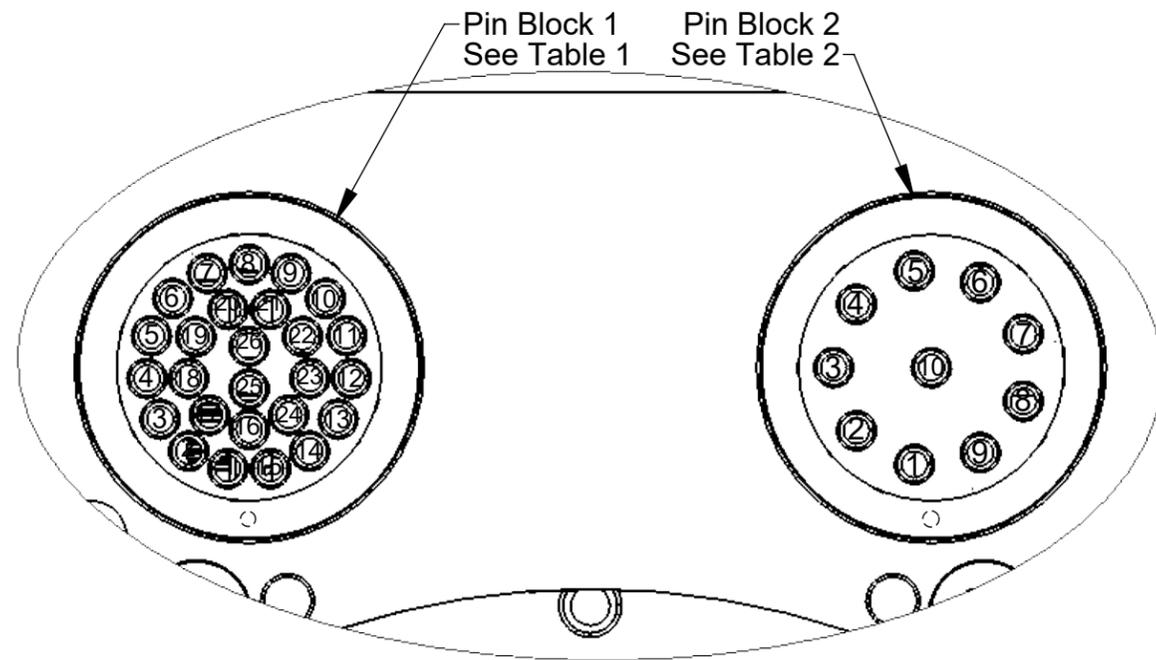
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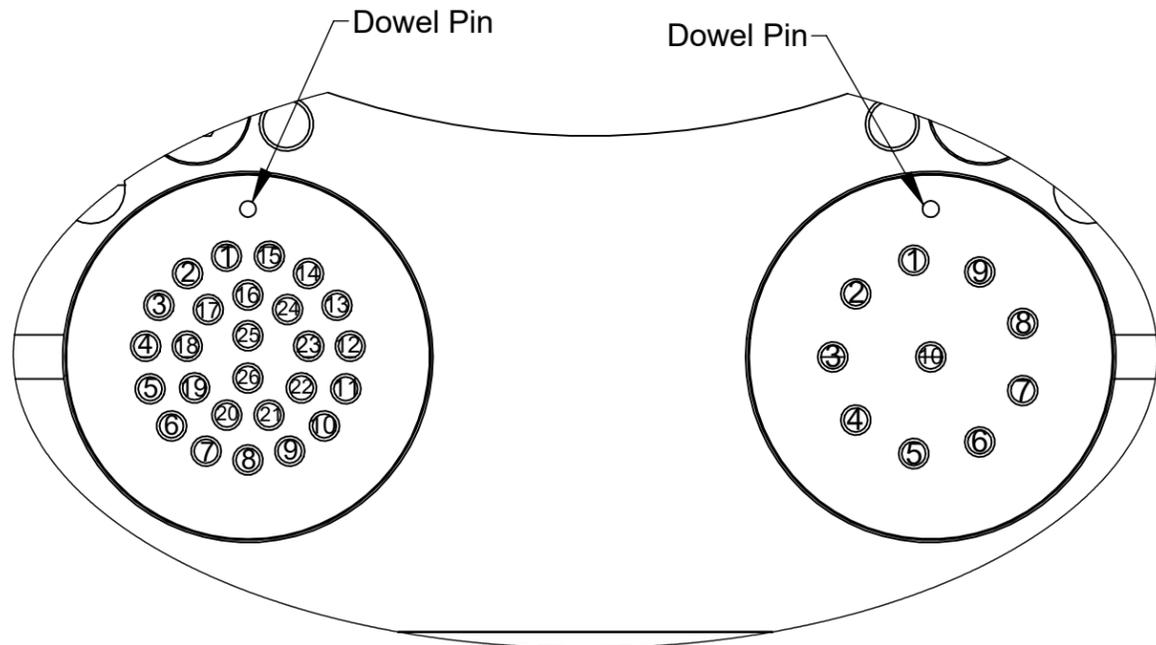
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CHECKED BY: A. Strotzer, 9/29/11		VB12 Module Drawing	
PROJECT # 110831-1	SHEET 1 OF 5	SCALE 1:2	SIZE B
		DRAWING NUMBER 9630-20-VB12	REVISION 08



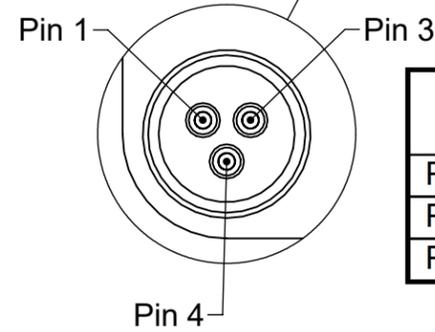
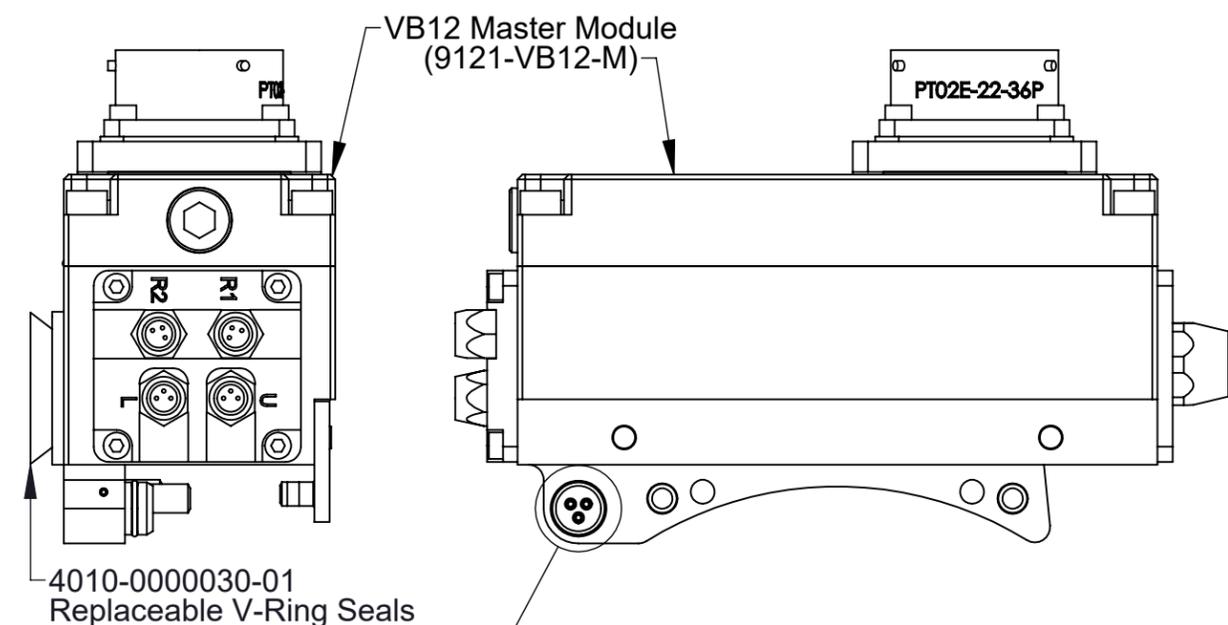
**Master Side Pin Blocks**  
SCALE 1.5 : 1



**Tool Side Pin Blocks**  
DETAIL B  
SCALE 1.5 : 1

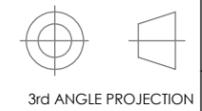
1	Available 1
2	Available 2
3	Available 3
4	Available 4
5	Available 5
6	Available 6
7	Available 7
8	Available 8
9	24V
10	Available 9
11	24V
12	Available 10
13	Available 11
14	Available 12
15	Available 13
16	Available 14
17	Available 15
18	Available 16
19	Available 17
20	Available 18
21	Available 19
22	Available 20
23	Available 21
24	Available 22
25	Available 23
26	Available 24

1	Available 25
2	Available 26
3	Available 27
4	Available 28
5	N/C
6	Tool Presence In 1 (24 V)
7	N/C
8	Tool Presence In 2 (24V)
9	N/C
10	N/C



Pin 1	V+	Unlatch Output
Pin 3	V-	Common
Pin 4	V+	Latch Output

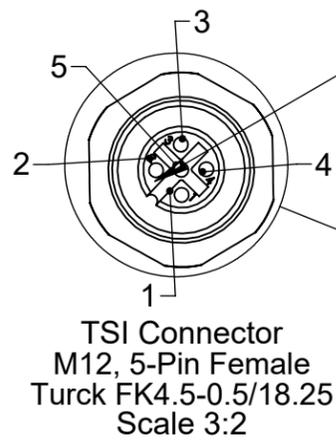
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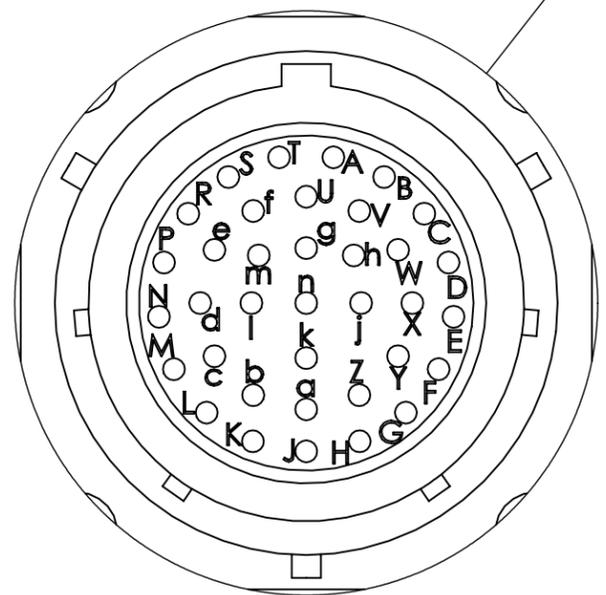
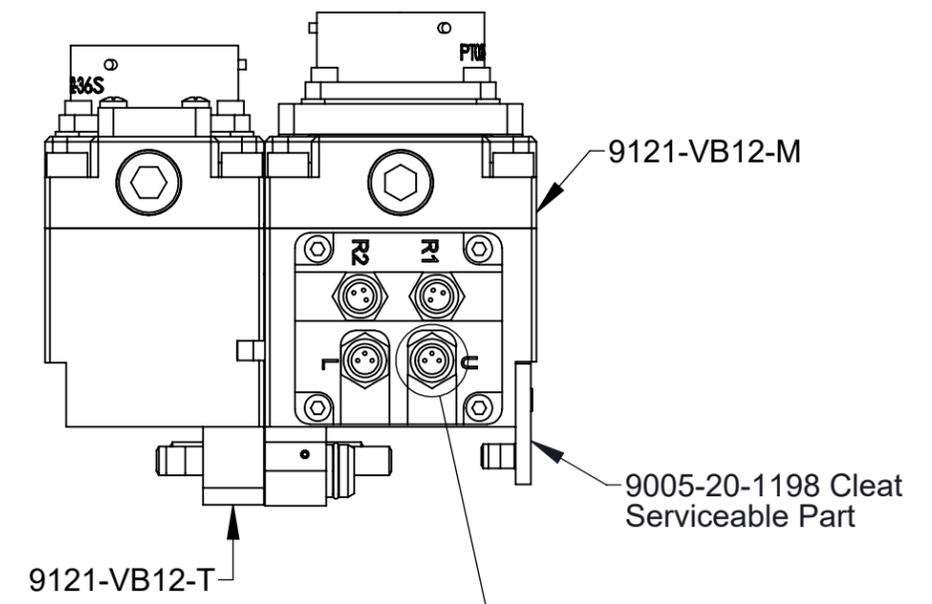
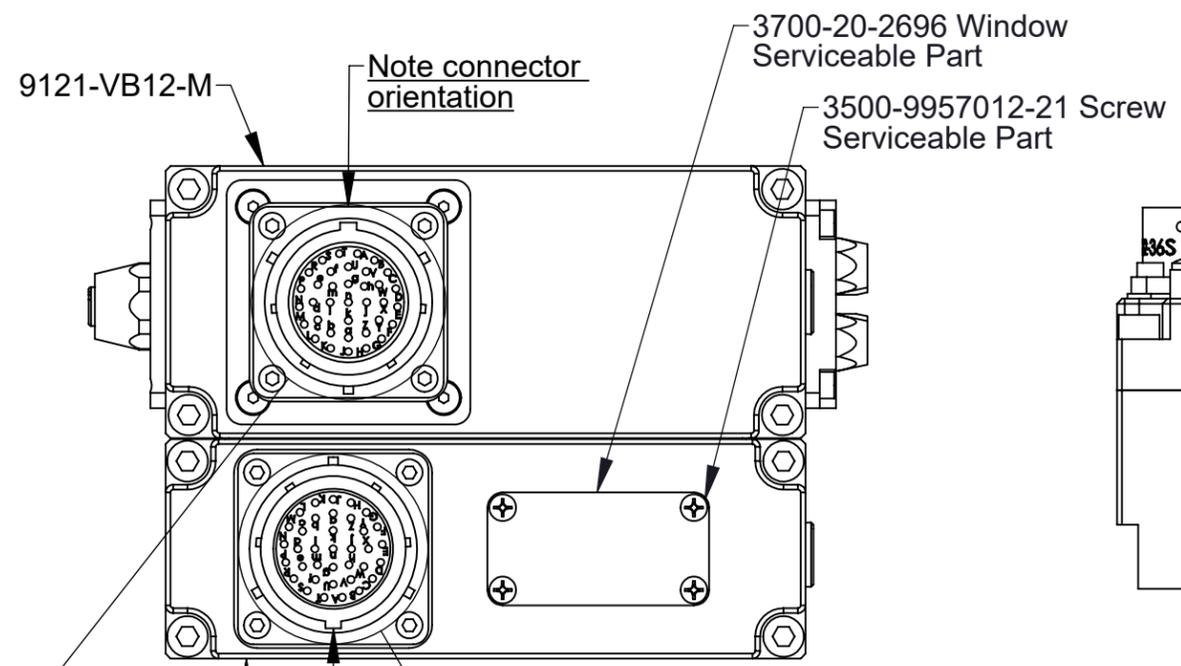
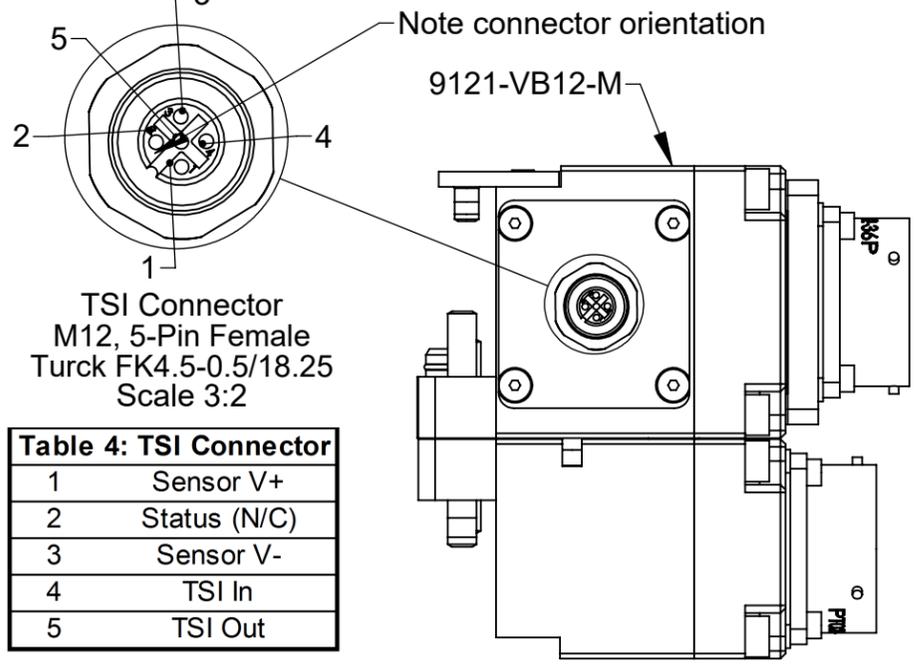
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CHECKED BY: A. Stotzer, 9/29/11	SCALE 2:3	SIZE B	DRAWING NUMBER 9630-20-VB12	08
PROJECT # 110831-1 SHEET 2 OF 5				

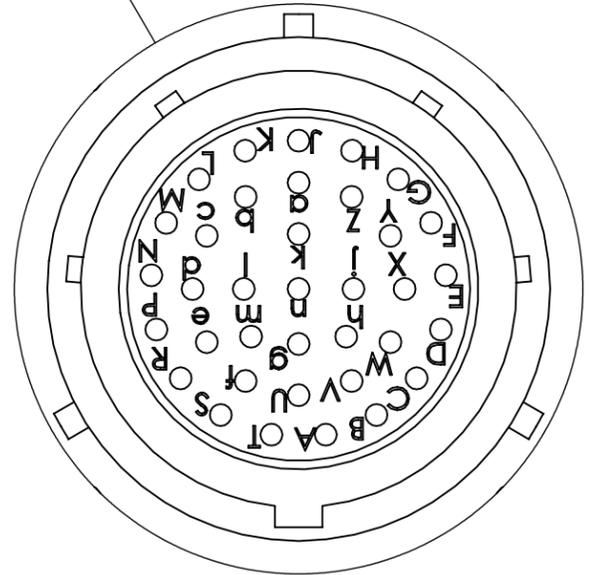


**Table 4: TSI Connector**

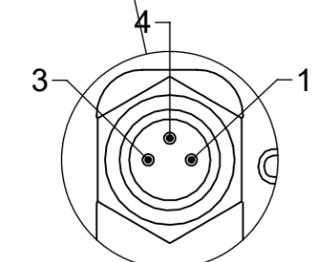
1	Sensor V+
2	Status (N/C)
3	Sensor V-
4	TSI In
5	TSI Out



36-Pin Male Connector (Master)  
Amphenol PT02E 22-36P  
Scale 2:1



36-Pin Female Connector (Tool)  
Amphenol PT02E 22-36S  
Scale 2:1



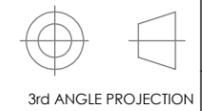
Sensor Connectors  
4X Turck MFKS 3  
Scale 2:1

**Table 5: Sensor Connectors**

1	V+
3	V-
4	Output

NOTES: UNLESS OTHERWISE SPECIFIED.

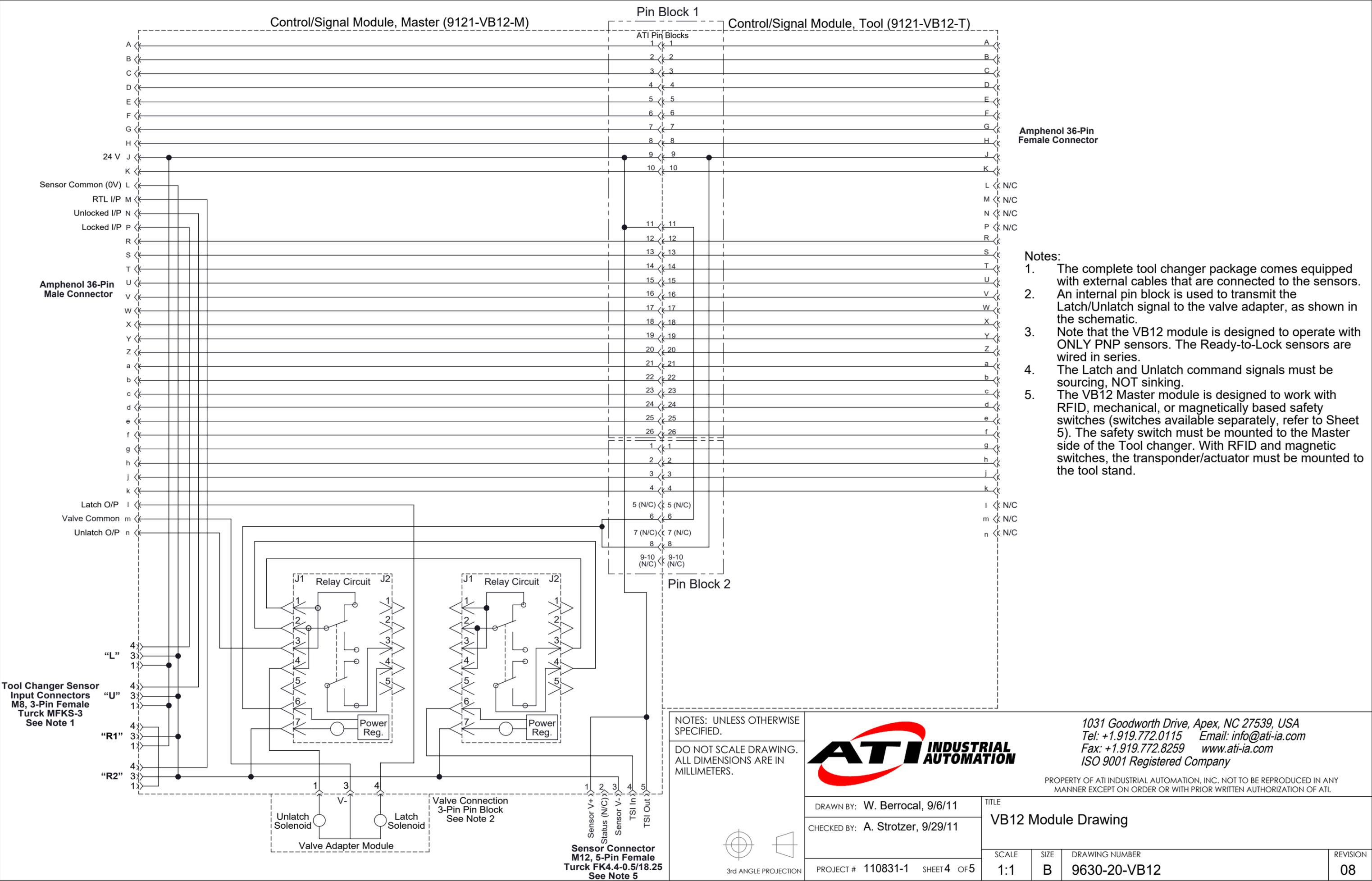
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PROJECT #	110831-1	SHEET	3	OF 5
SCALE	2:3	SIZE	B	DRAWING NUMBER
				9630-20-VB12
				REVISION
				08



Amphenol 36-Pin Female Connector

Amphenol 36-Pin Male Connector

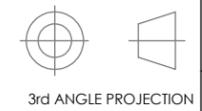
**Notes:**

1. The complete tool changer package comes equipped with external cables that are connected to the sensors.
2. An internal pin block is used to transmit the Latch/Unlatch signal to the valve adapter, as shown in the schematic.
3. Note that the VB12 module is designed to operate with ONLY PNP sensors. The Ready-to-Lock sensors are wired in series.
4. The Latch and Unlatch command signals must be sourcing, NOT sinking.
5. The VB12 Master module is designed to work with RFID, mechanical, or magnetically based safety switches (switches available separately, refer to Sheet 5). The safety switch must be mounted to the Master side of the Tool changer. With RFID and magnetic switches, the transponder/actuator must be mounted to the tool stand.

Tool Changer Sensor Input Connectors M8, 3-Pin Female Turck MFKS-3 See Note 1

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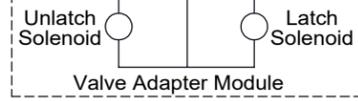
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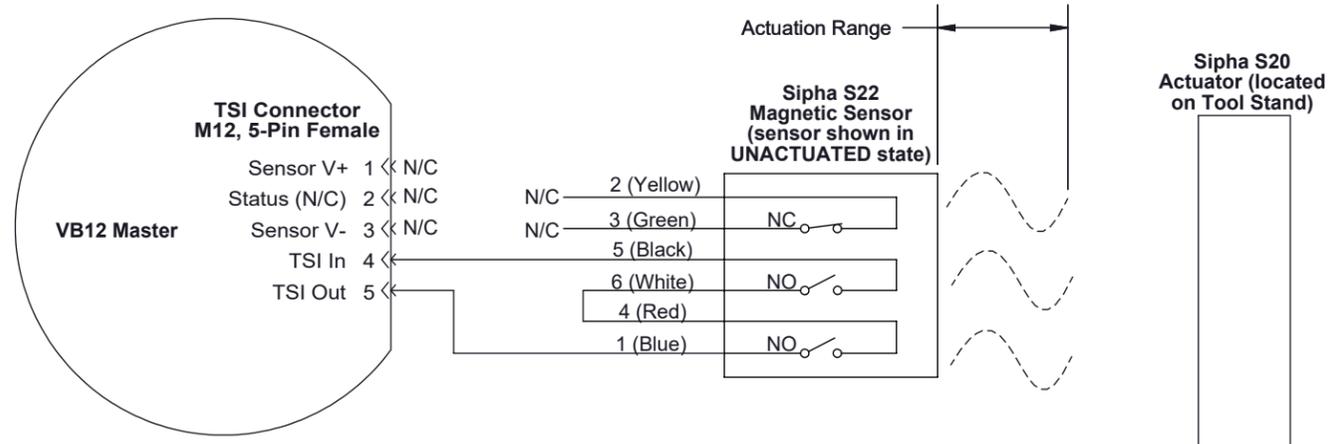
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PROJECT # 110831-1	SHEET 4 OF 5	SCALE 1:1	SIZE B
		DRAWING NUMBER 9630-20-VB12	REVISION 08

Sensor Connector M12, 5-Pin Female Turck FK4.4-0.5/18.25 See Note 5

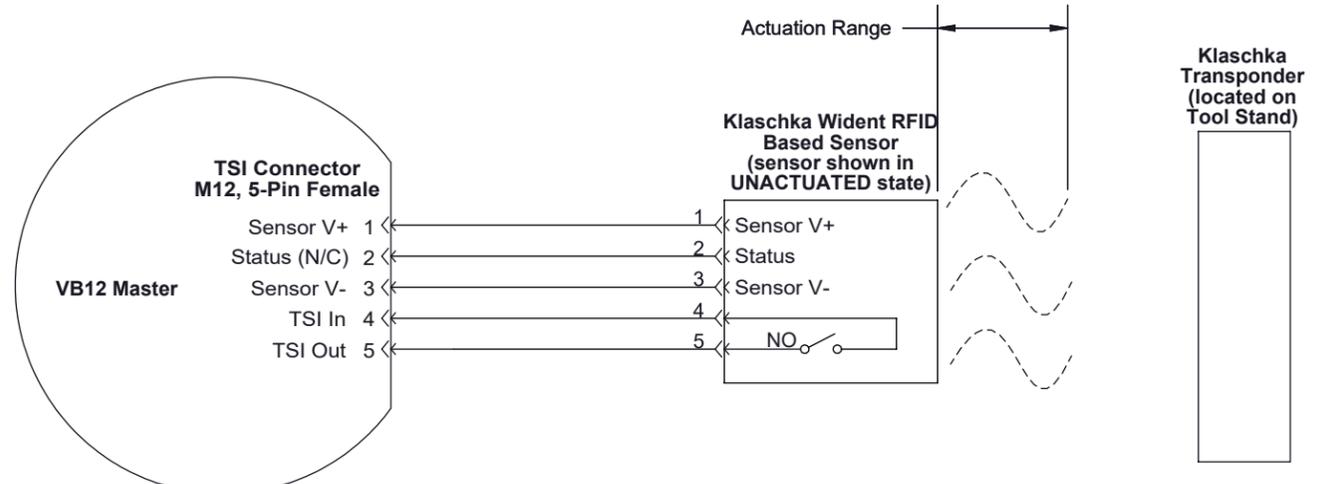
Valve Connection 3-Pin Pin Block See Note 2





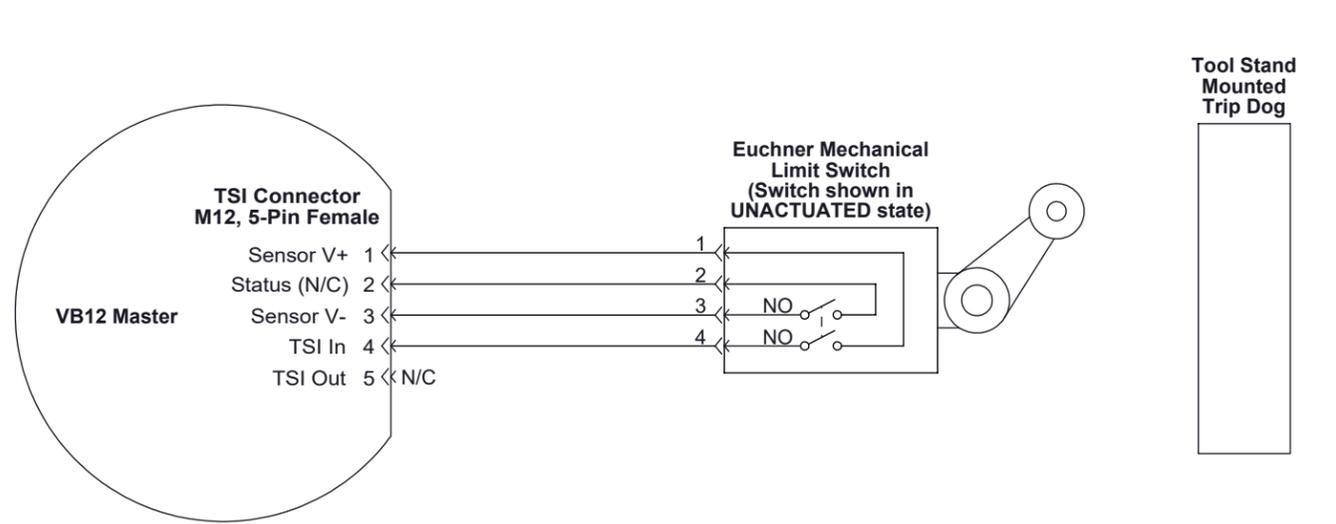
**Magnetic Sensor Notes:**

1. With RFID and magnetically based safety sensors, the unlock circuit will be completed when the sensor is in close proximity to the actuator. With the actuator mounted on the tool stand, the sensor will insure that a Tool can only be released at the tool stand.
2. ATI part numbers for the Allen-Bradley Sipa magnetic sensor are as follows:
  - Sipa S22/S20 Sensor and Actuator: 8600-440N-S32023-01
  - Sipa S22 Sensor Only: 8600-440N-S32023
  - Sipa S20 Actuator Only: 8605-440N-A32020
 Note: The Sipa sensor comes pre-assembled with a 3m long cable and M12, 5-pin connector.



**RFID Sensor Notes:**

1. With RFID based safety sensors, the unlock circuit will be completed when the sensor is in close proximity to the transponder. With the transponder mounted on the tool stand, the sensor will insure that a Tool can only be released at the tool stand.
2. The sensor is connected to the VB12 Master module via the 5-pin M12 connector (the cable to the sensor is not included).
3. ATI part number for the Klaschka WIDENT safety sensor mounting hardware is as follows:
  - Transponder Bracket Assembly: 9121-TSL-KT-5841

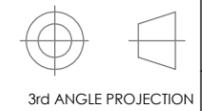


**Mechanical Limit Switch Notes:**

1. Using a mechanical limit switch, the unlock circuit will be completed only when the switch has been actuated by a Tool Stand mounted cam or trip dog. It is suggested that a single pole, single throw (Normally Open, spring return) limit switch is utilized. The limit switch should be mounted to the end effector in such a way that the switch is "made" only when the Tool is in the stand or storage location.
2. The limit switch is connected to the VB12 Master module via the 5-pin M12 connector (the cable to the limit switch is not included).
3. ATI part number for the recommended Euchner limit switch is as follows:
  - Euchner Safety Switch NZ1HS-3131-M: 8510-9909999-01

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CHECKED BY: A. Strotzer, 9/29/11		VB12 Module Drawing		
PROJECT #	110831-1	SHEET	5	OF 5
SCALE	1:1	SIZE	B	DRAWING NUMBER
				REVISION
				08