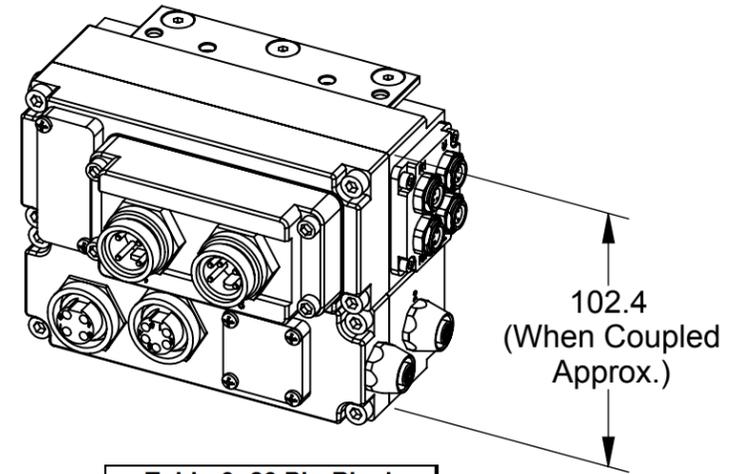
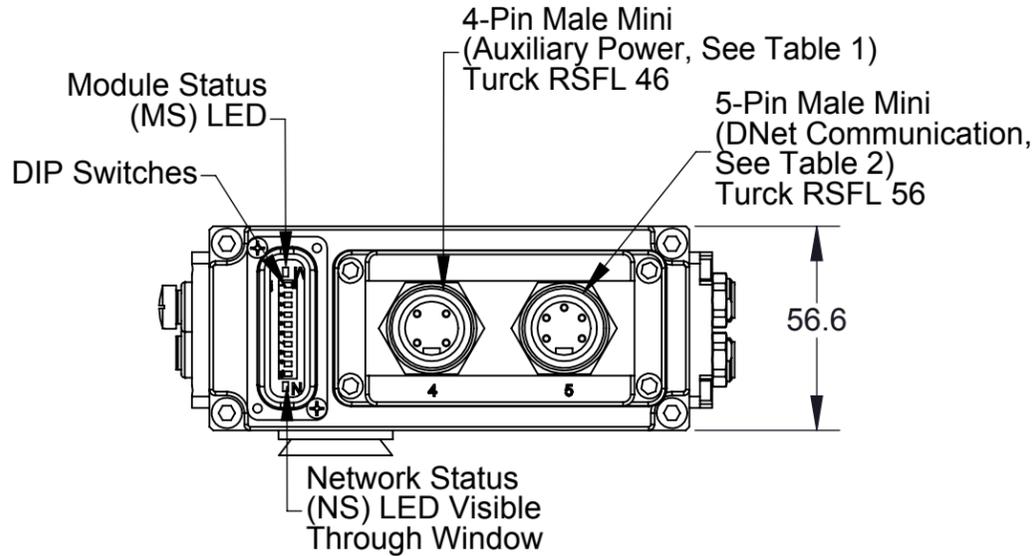


Rev.	Description	Initiator	Date
07P	Added Pressure Sensor Guard. Changed geometry of Tool Cover.	WB	8/23/2016
08	Removed pressure sensor guard. Project release.	WB	10/24/2016
09	Added Sheets 5 and 6 outlining connection to single and multiple Safety Switches. Modified notes on Sheet 1 and 4.	WB	6/12/2017

### DU3 Master Module (9121-DU3-M)



### DU3 Tool Module (9121-DU3-T)

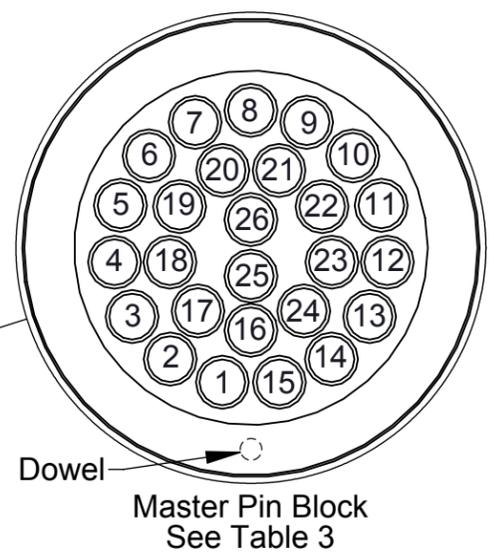
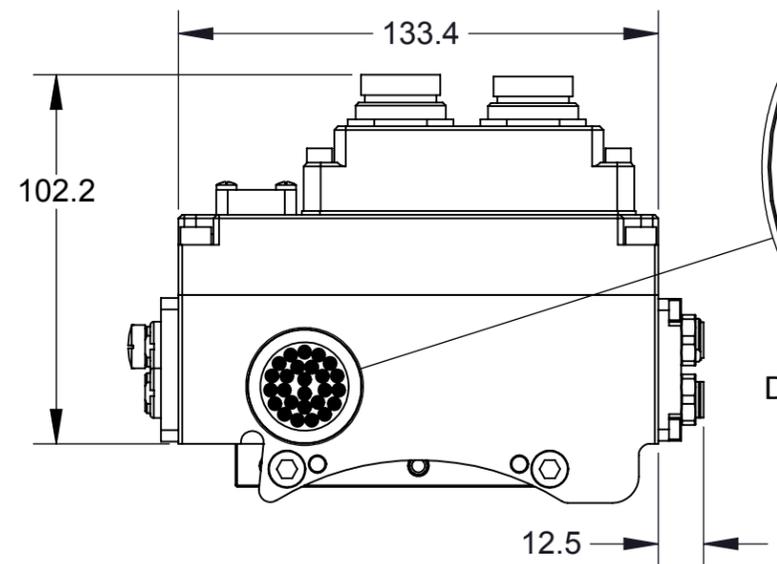
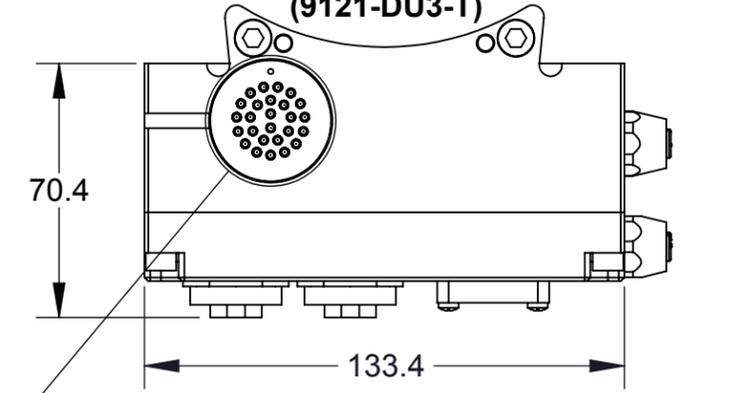


Table 3: 26-Pin Block Signal Designations	
1	CAN V+
2	TOOL ID1
3	TSI 1
4	TSRV2
5	TSI 2
6	TSRV1
7	N/C
8	UNLATCH IN
9	CAN_H
10	UNSW N1 (-24V)
11	THERMAL 1
12	UNSW P1 (0V)
13	CAN V-
14	N/C
15	UNLATCH OUT
16	CAN V+_TH
17	TOOL ID2
18	TOOL ID4
19	TOOL ID8
20	N/C
21	CAN_L
22	SW N2 (-24V)
23	SW P2 (0V)
24	N/C
25	TOOL PRESENT
26	DRAIN

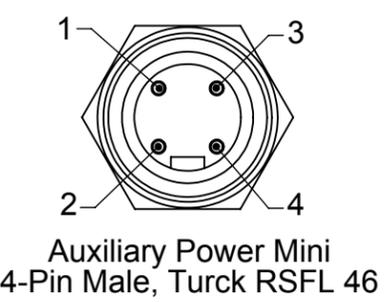
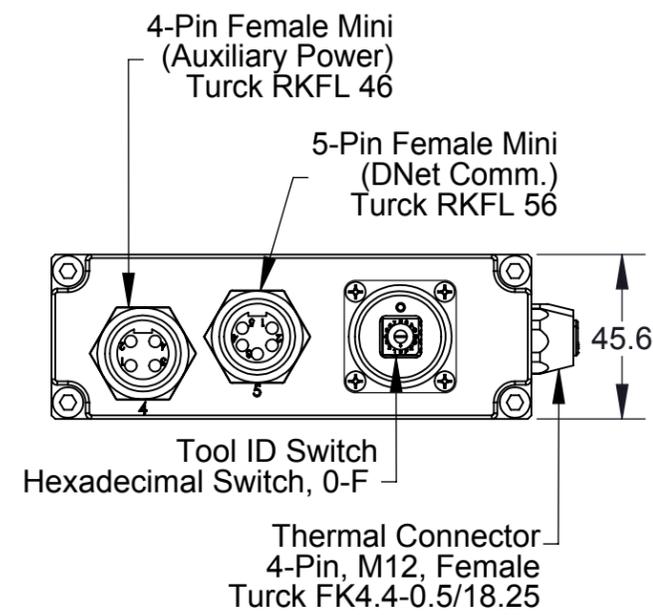
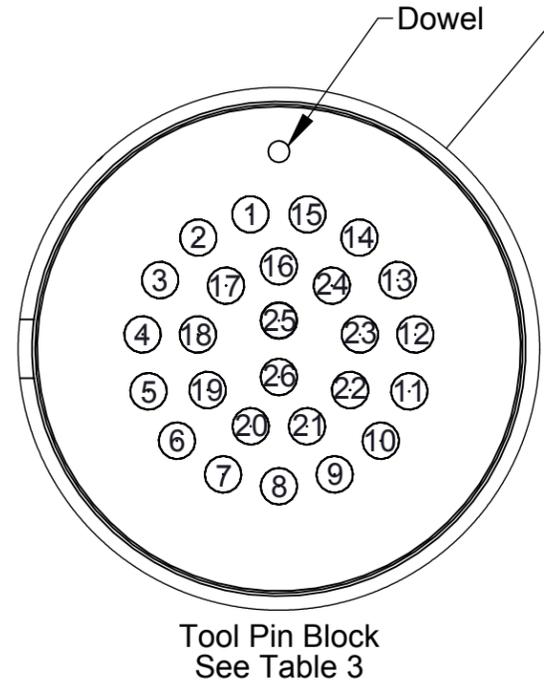


Table 1: Auxiliary Power Connector	
1	P2 (0V SW)
2	P1 (0V UNSW)
3	N1 (-24V UNSW)
4	N2 (-24V SW)

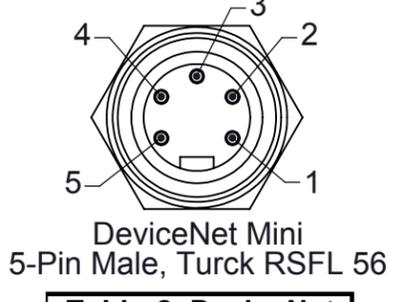
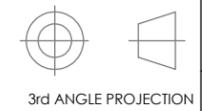


Table 2: DeviceNet Connector	
1	Drain
2	CAN V+
3	CAN V-
4	CAN_H
5	CAN_L

- Notes:
- Reference the manual for information related to DIP switch settings, LED behavior and general product operation. Connectors are oriented as shown unless otherwise specified.
  - Electrical schematic and notes are shown on Sheets 3 and 4. Connection to Safety Switches is outlined on Sheets 5 and 6. Serviceable Parts are listed on Sheet 7.

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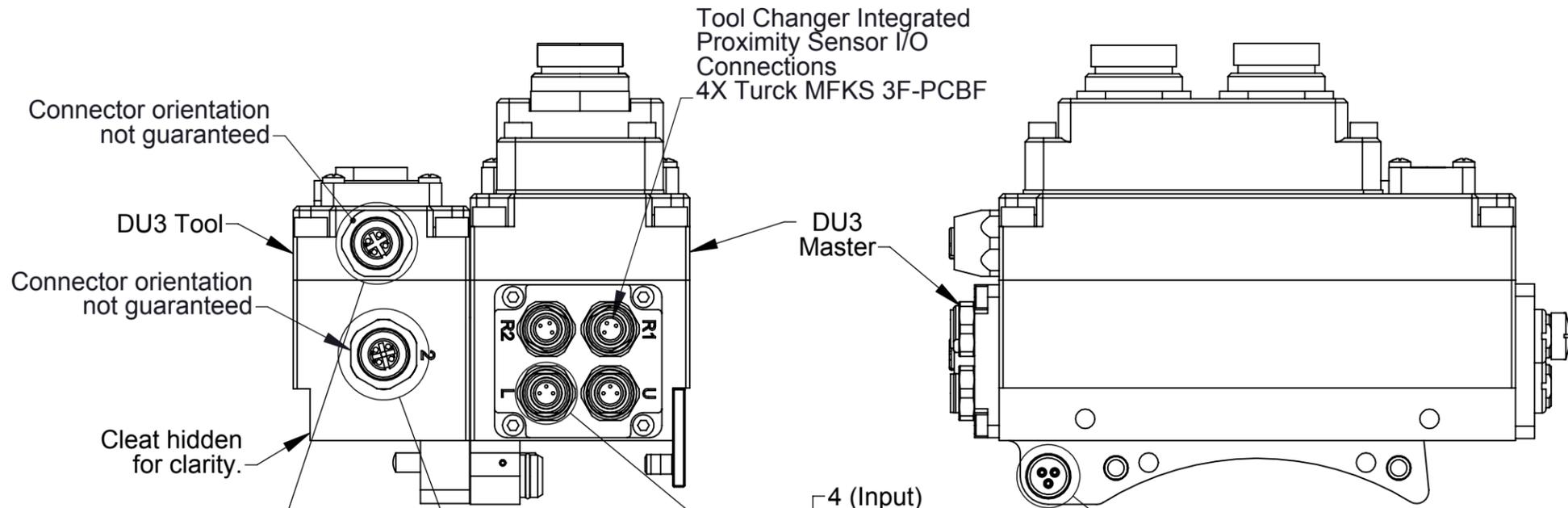


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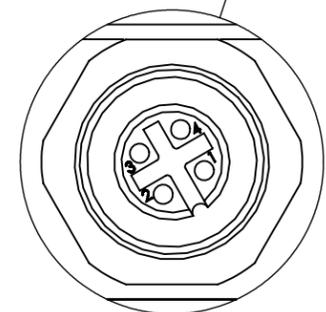
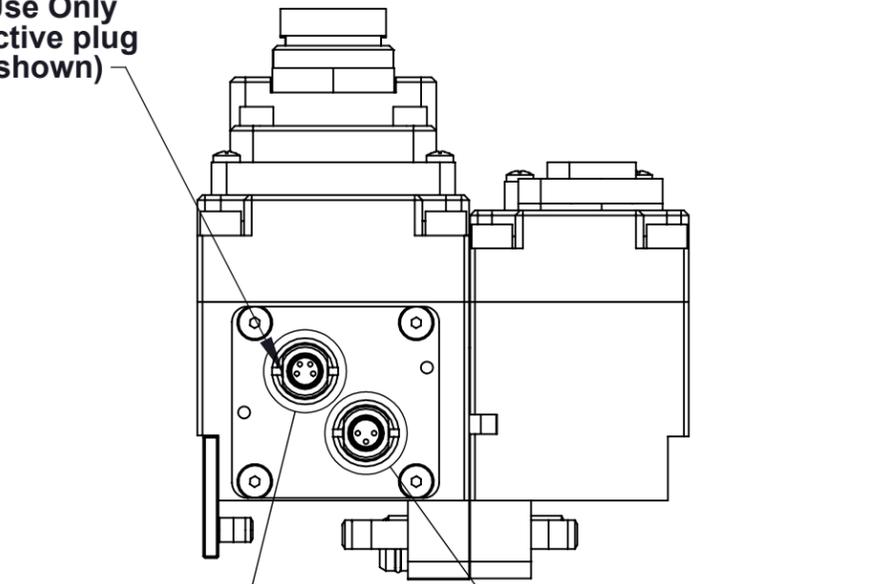
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PROJECT # 141021-2	SHEET 1 OF 7	SCALE 1:2	SIZE B
DRAWING NUMBER 9630-20-DU3M DU3T		REVISION 09	

Rev.	Description	Initiator	Date
-	See Sheet1	-	-

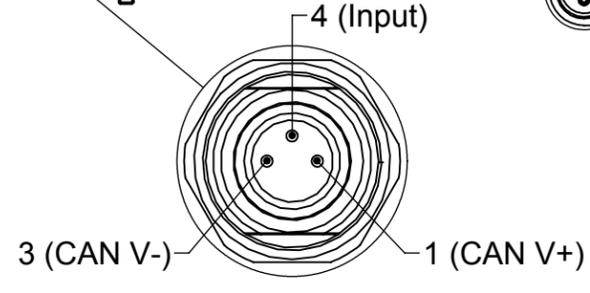


Diagnostic Connector  
M8 4-Pin Female  
**ATI Use Only**  
(Protective plug not shown)

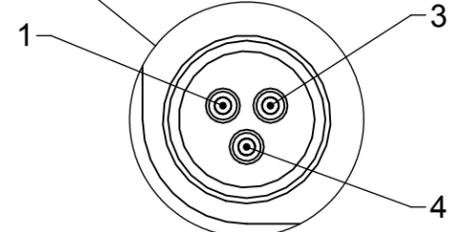


Thermal Connector  
Turck M12 4-Pin Female  
FK4.4-0.5/18.25  
Scale 2:1

Table 4: Thermal Input Connector	
1	P1 (0V UNSW)
2	THERMAL 1
3	N1 (-24V UNSW)
4	N/C

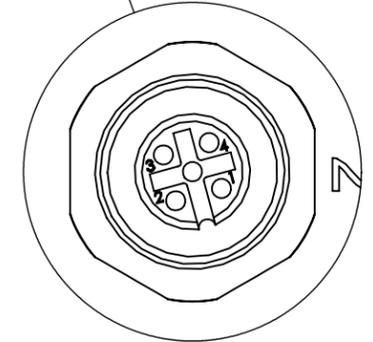


Sensor Input Connection  
M8 3-Pin Female  
Turck MFKS 3F-PCBF  
Typical  
Scale 2:1



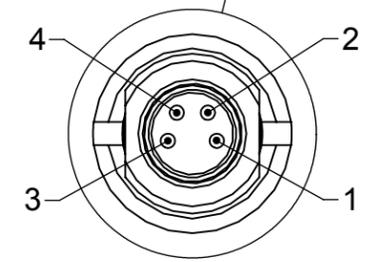
DETAIL J  
SCALE 2 : 1

Table 6: Valve Signal Pin Block	
1	UNLATCH (0V)
3	N2 (-24V SW)
4	LATCH (0V)



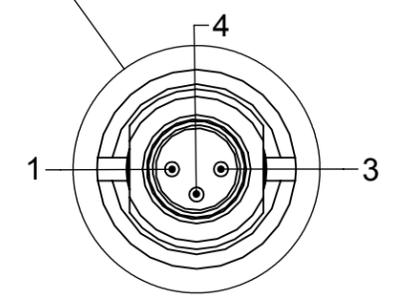
Safety Switch Connector  
Turck M12 5-Pin Female  
FK4.5-0.5/18.25  
Scale 2:1

Table 5: Safety Switch Connector	
1	CAN V+_TH
2	TS11
3	CAN V-
4	TS12
5	N/C



Diagnostic Connection  
M8 4-Pin Female  
Turck MFKS 4F  
Scale 2:1

Table 7: Diagnostic Connector	
1	Tx+
2	Tx-
3	Rx+
4	Rx-

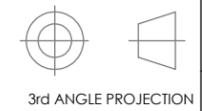


Pressure Switch Connection  
M8 3-Pin Female  
Turck MFKS 3F  
Scale 2:1

Table 8: Pressure Switch Connector	
1	CAN V+_TH
3	N/C
4	Input

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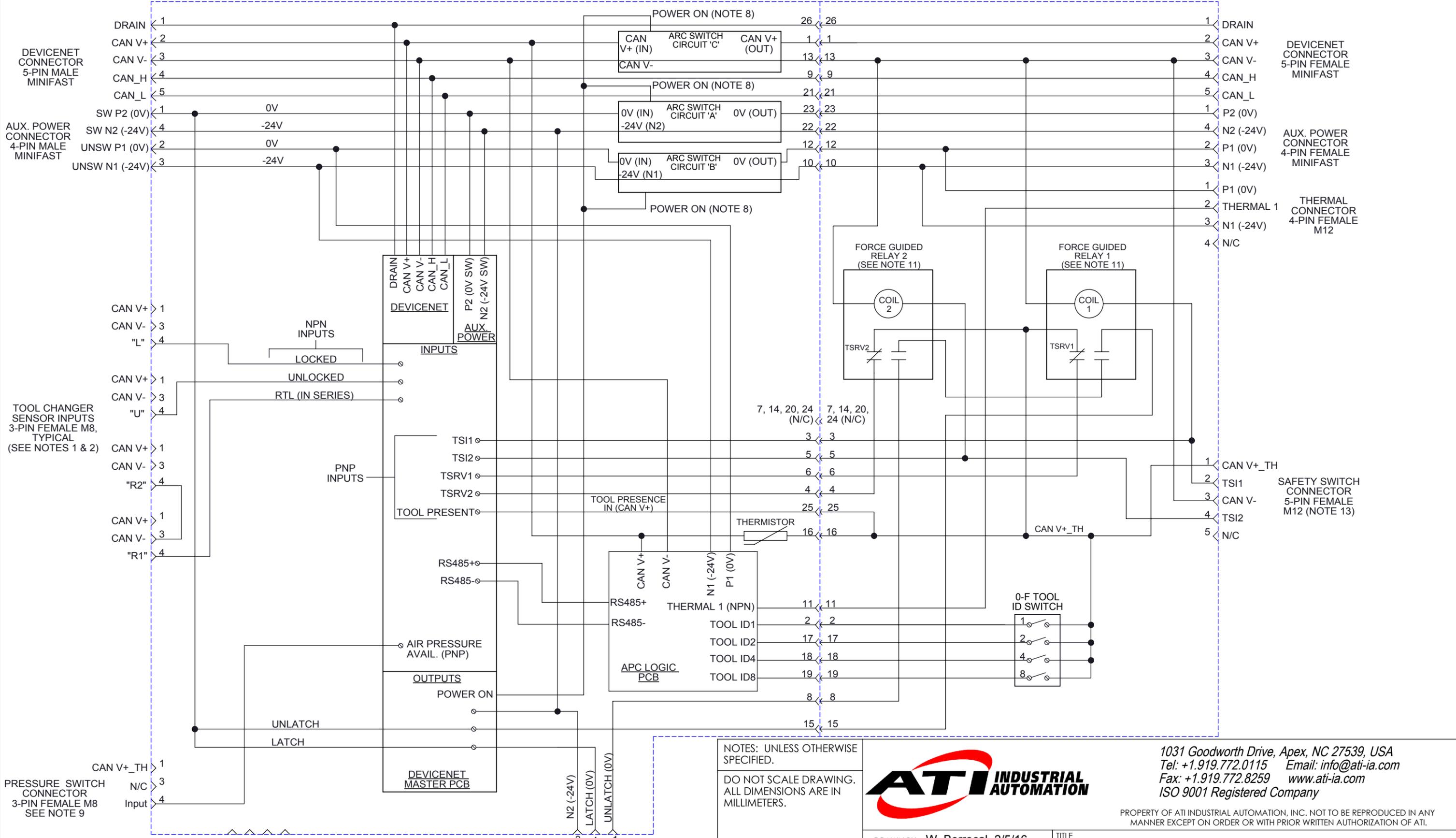
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PROJECT # 141021-2	SHEET 2 OF 7	DRAWING NUMBER 9630-20-DU3M DU3T	

# 9121-DU3-M

## 26-PIN BLOCK INTERFACE

# 9121-DU3-T



NOTES: UNLESS OTHERWISE SPECIFIED.

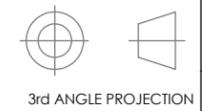
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DRAWING NUMBER 9630-20-DU3M DU3T		REVISION 09	



PRESSURE SWITCH CONNECTOR 3-PIN FEMALE M8 SEE NOTE 9

DIAGNOSTIC CONNECTION 4-PIN FEMALE M8 ATI USE ONLY

VALVE ADAPTER CONNECTION 3-PIN PIN BLOCK NOTE 3

Rev.	Description	Initiator	Date
-	See Sheet1	-	-

**Schematic Notes:**

1. Note that the sensors are powered by DeviceNet power. The common V+ and V- connections are not shown here.
2. The complete tool changer package comes equipped with external cables that are connected to the sensors. The RTL, Locked, and Unlocked sensors are NPN.
3. The Latch and Unlatch signals are provided to a Double-Solenoid Valve Adapter via an internal 3-Pin Pin Block. Note: Only double-solenoid valves are supported.
4. In the event that a Tool Changer equipped with the tool changer is locked without a Tool, the only way to unlock the Tool Changer is to press the manual override button located on the control valve.
5. Cables for DeviceNet and Auxiliary Power to the DU3 Modules are supplied by the user.
6. The Tool ID I/O is reported in the DU3 Master Bitmap.
7. The Thermal 1 input from the Tool side M12 connector is NPN.
8. The Arc Prevention Circuits turn off DeviceNet and Auxiliary Power during coupling and uncoupling of the Master and Tool. The switching function is controlled by the "POWER ON" signal from the main PC Board. The TOOL PRESENT input is used to ensure that the spring/contact pins are touching when power is turned on. Refer to the product manual for additional information.
9. The Pressure Switch input indicates when the supply pressure is greater than 60 psi (PNP input). The CAN V+ \_TH connection is not shown here. Reference the customer drawing for the valve adapter for additional details.
10. The DU3 Tool is equipped with a 0-F rotary switch for setting the Tool ID. There are 16 unique tool IDs that can be selected.
11. The interlock relays in the DU3 Tool are Force Guided Relays. The 24V Unlatch is transmitted via the NO contacts. The relay diagnostic signals (i.e. TSRV1 and TSRV2) shall monitor the NC contacts (per EN50205, NO and NC contacts shall be used for Force Guided Relays). The relays are shown in the un-energized state, i.e. Tool not in the Tool Stand.
12. CAN V+ \_TH is current limited CAN V+ used to drive the TSI Relays and Safety Switch(es).
13. Connection to a single Safety Switch is shown on Sheet 5 (Figure 1). Series connection to two Safety Switches is shown on Sheet 5 (Figure 2). Series connection to more than two Safety Switches is shown on Sheet 6 (Figure 3).

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3rd ANGLE PROJECTION



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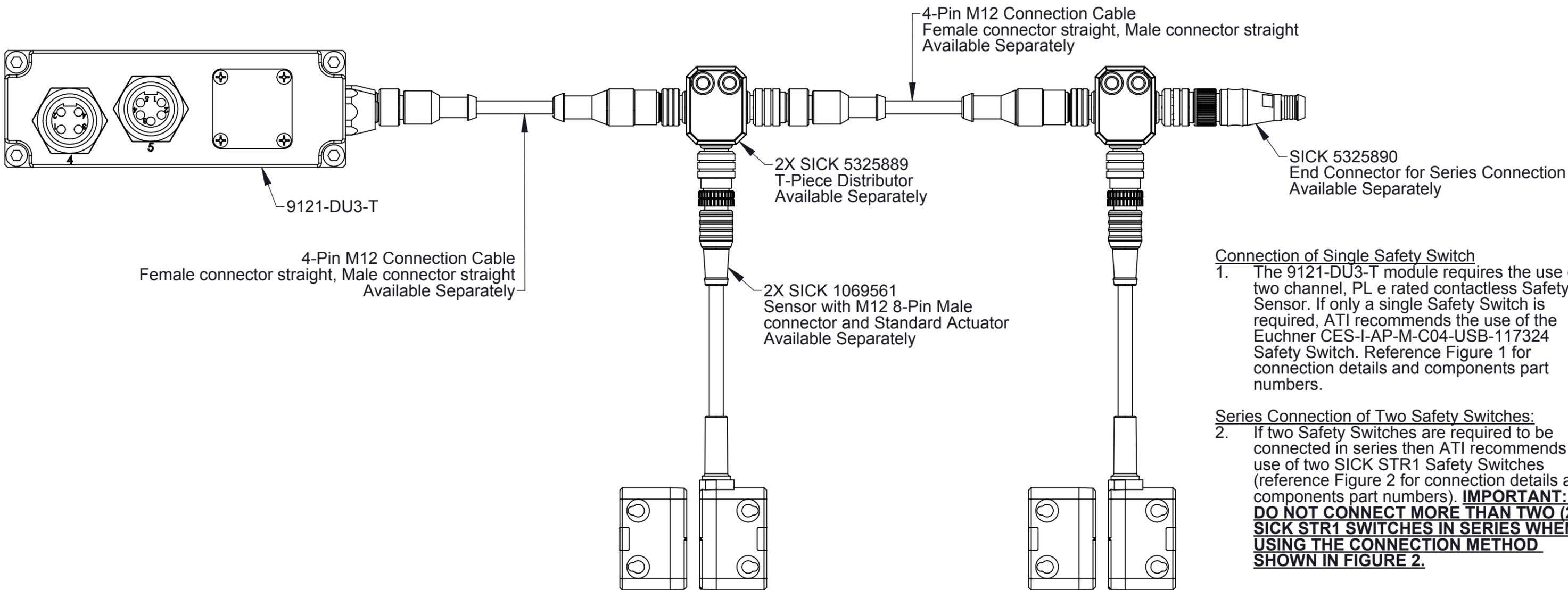
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SCALE	1:10	SIZE	B
DRAWING NUMBER		REVISION	
9630-20-DU3M DU3T		09	

REV.	DESCRIPTION	INITIATOR	DATE
-	See Sheet1	-	-



**Figure 1: Connection of 1X Euchner CES-AP-C01 Safety Sensor**



**Figure 2: Connection of 2X SICK STR1 Safety Sensors in Series**

**Connection of Single Safety Switch**

1. The 9121-DU3-T module requires the use of a two channel, PL e rated contactless Safety Sensor. If only a single Safety Switch is required, ATI recommends the use of the Euchner CES-I-AP-M-C04-USB-117324 Safety Switch. Reference Figure 1 for connection details and components part numbers.

**Series Connection of Two Safety Switches:**

2. If two Safety Switches are required to be connected in series then ATI recommends the use of two SICK STR1 Safety Switches (reference Figure 2 for connection details and components part numbers). **IMPORTANT: DO NOT CONNECT MORE THAN TWO (2) SICK STR1 SWITCHES IN SERIES WHEN USING THE CONNECTION METHOD SHOWN IN FIGURE 2.**

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3rd ANGLE PROJECTION

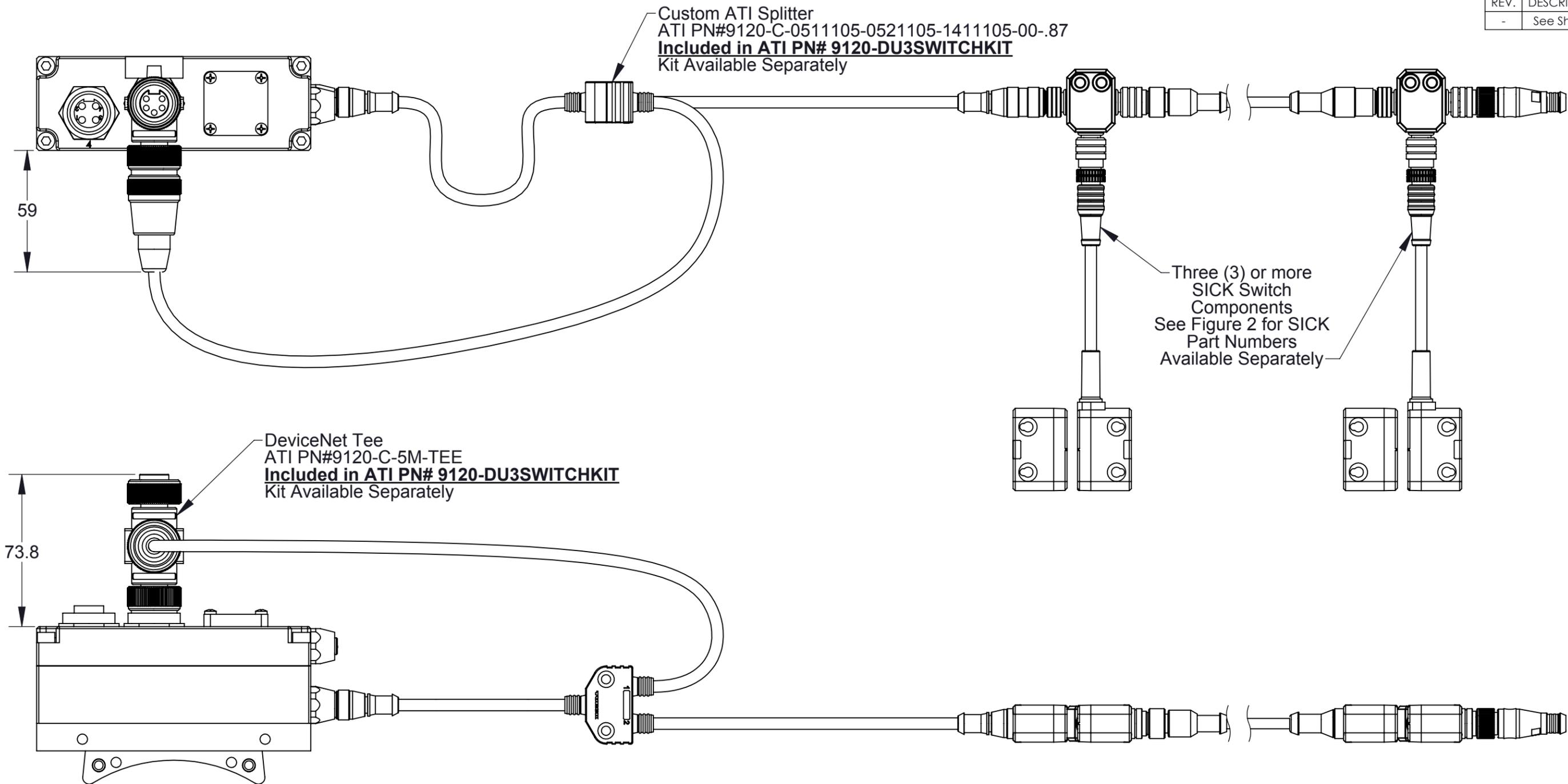


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DRAWING NUMBER 9630-20-DU3M DU3T		REVISION 09	

REV.	DESCRIPTION	INITIATOR	DATE
-	See Sheet1	-	-



**Figure 3: Connection of Three (3) or More SICK STR1 Safety Switches in Series**

**Series Connection of Three or More Safety Switches:**

1. If three (3) or more Safety Switches are required to be connected in series then it will be necessary to combine the use of the SICK STR1 Safety Switches with the ATI 9120-DU3SWITCHKIT in the manner shown in Figure 3.

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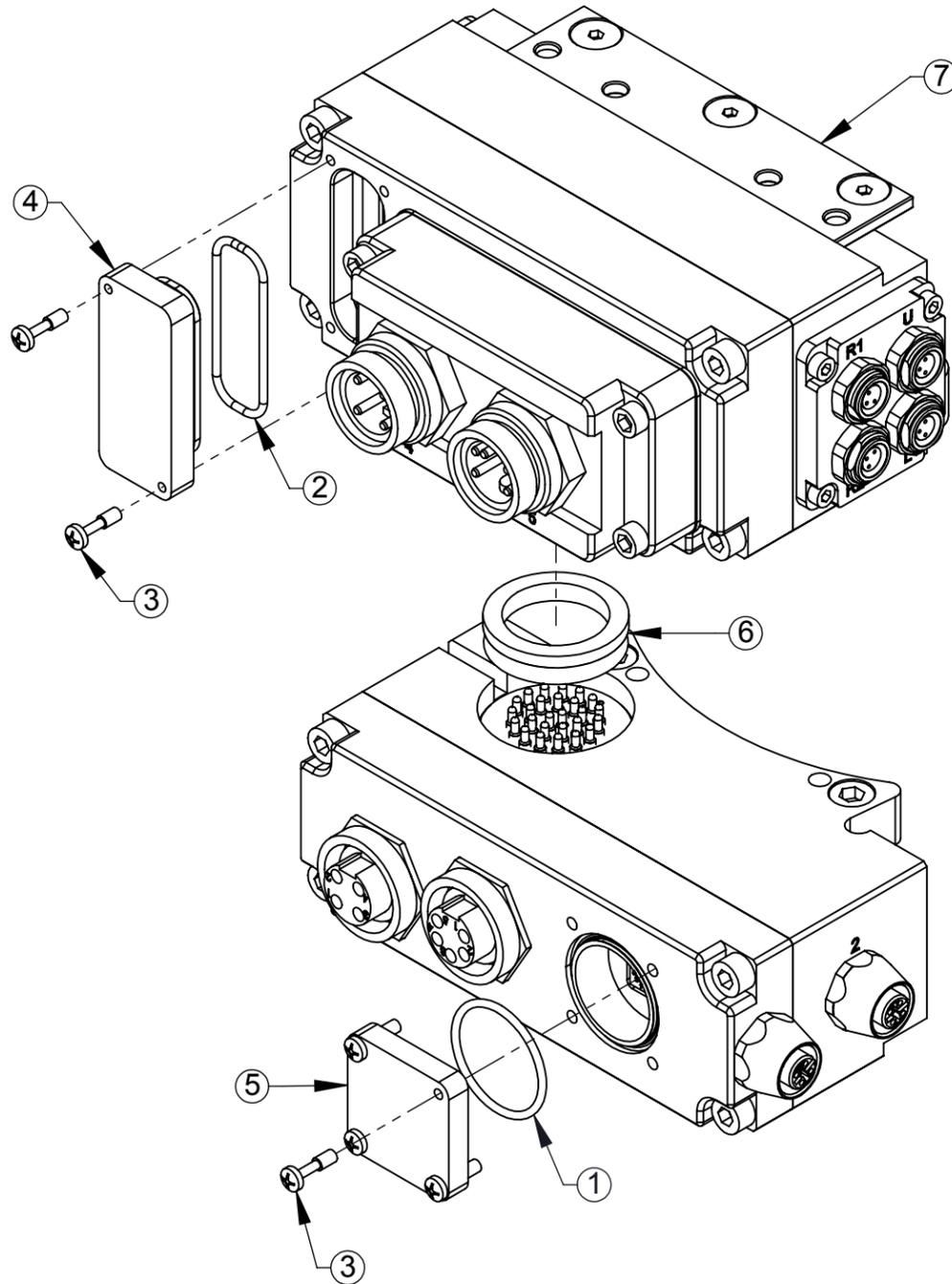


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DRAWING NUMBER 9630-20-DU3M DU3T		REVISION 09	

Rev.	Description	Initiator	Date
-	See Sheet1	-	-



9121-DU3-M/T SERVICEABLE PARTS			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	3410-0001008-01	Tool ID Window O-Ring
2	1	3410-0001201-01	O-Ring AS568-024
3	6	3500-9957012-21	Pan Head M3 Captive Screw M3 X 12
4	1	3700-20-2696	Device Net Master Window, Thick
5	1	3700-20-5844	Tool ID Window
6	1	4010-0000030-01	V-Ring Seal V-22A Nitrile
7	1	9005-20-1198	Master Cleat Sub-Assembly

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			REVISION 09