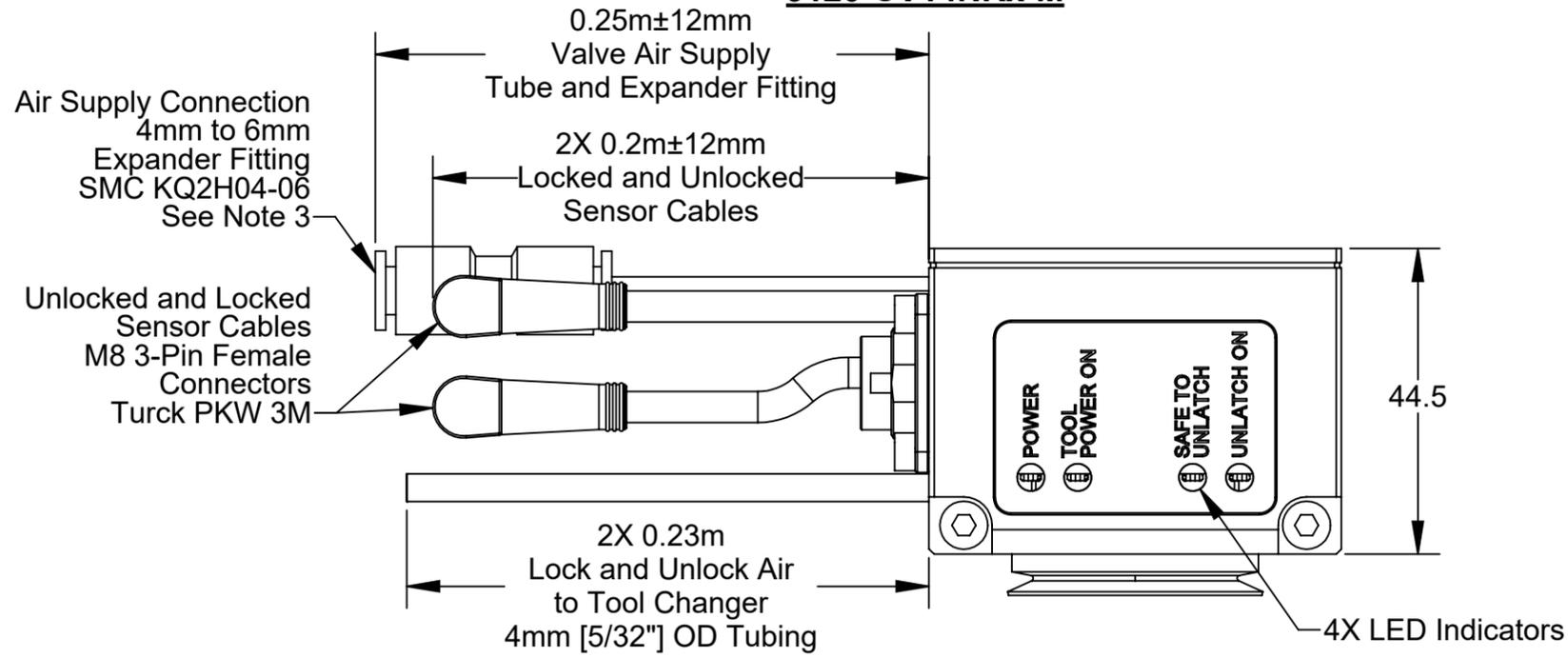
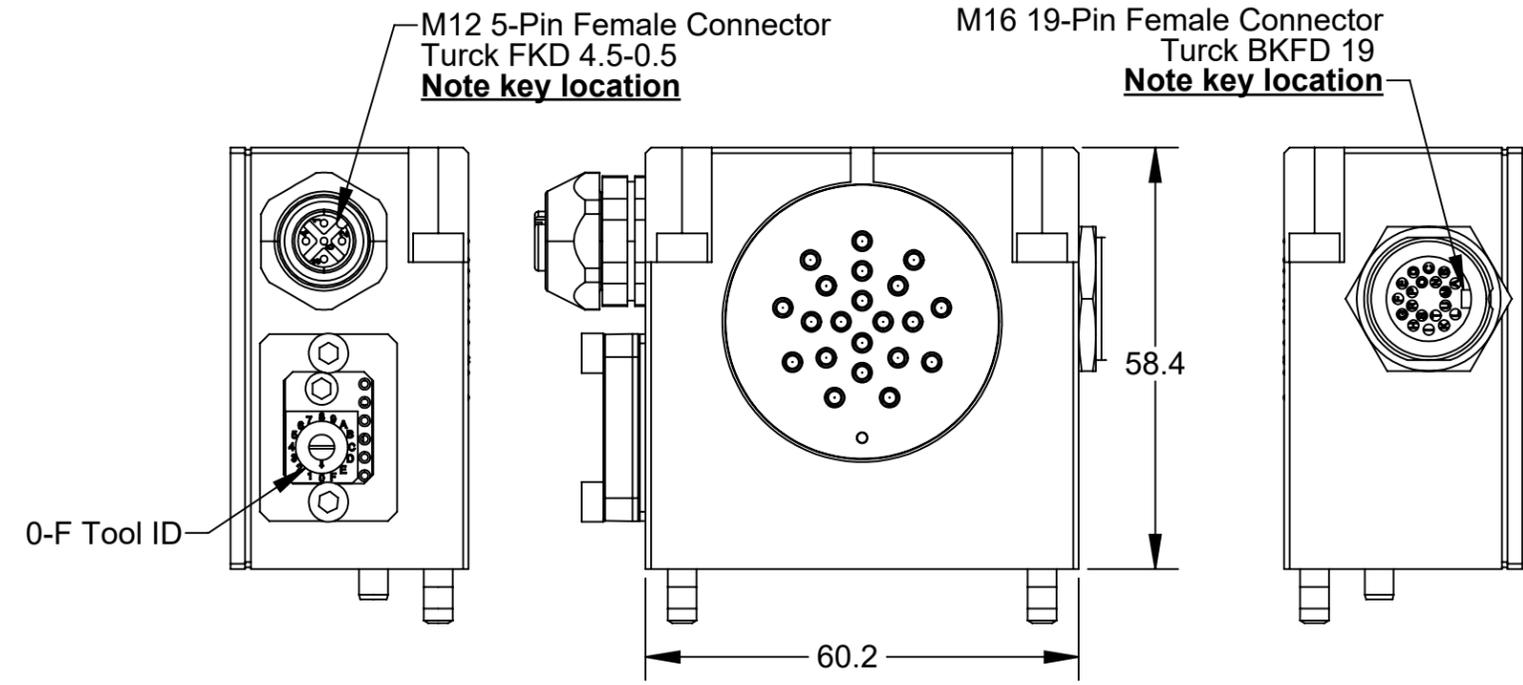
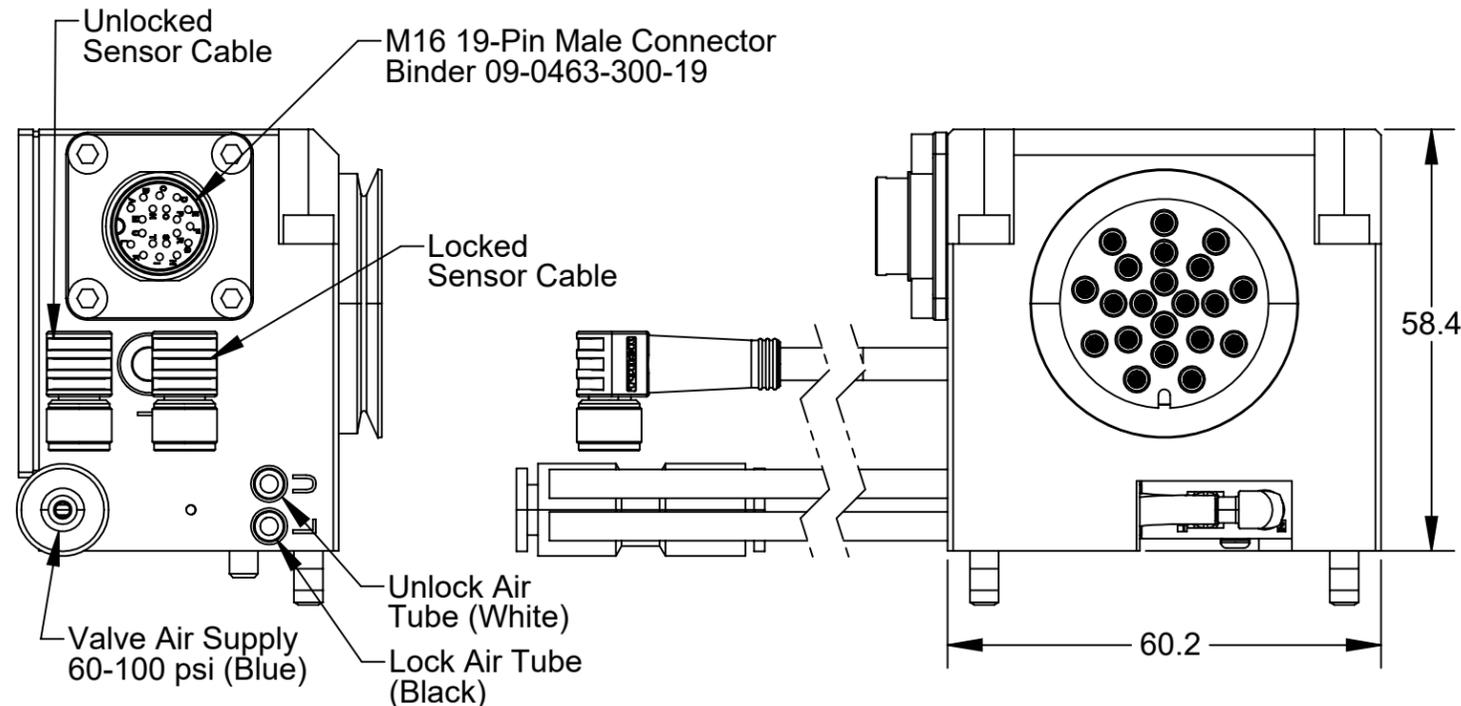
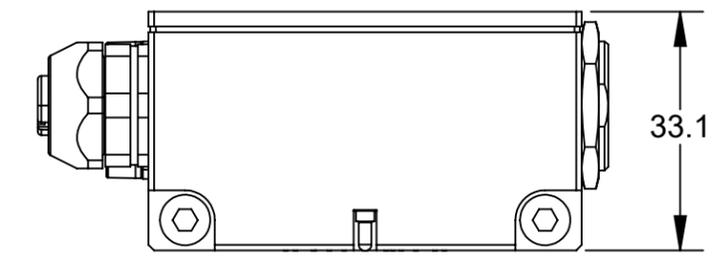


REV.	DESCRIPTION	INITIATOR	DATE
06	ECO 21840: Sht 4: Updated Note 2 to 3A, 50V.	BAW	7/31/2024

**9120-CV14NRx-M**



**9120-CV10N-T**



- Notes:**
- The CV14NRx-M family of Master modules have right angle Locked and Unlocked sensor connectors and are designed to work with NPN sensors and NPN unlatch output.
  - The CV14NRx-M family of modules include 1X Lock and 1X Unlock port fittings. The type of pneumatic fittings included with the module is designated by the module part number as follows:
    - 9120-CV14NRN-M = 1/8 NPT Fittings
    - 9120-CV14NRE-M = 1/8 BSPP Fittings
    - 9120-CV14NRR-M = 1/8 BSPT Fittings
    - 9120-CV14NRM-M = M5 Fittings
Note: Fittings are not shown in this drawing.
  - The Tool Changer air supply is connected to the module via a 4mm-to-6mm expander fitting and 4mm [5/32"] OD tubing.
  - Connector pin-outs are on Sheet 2.
  - Electrical Schematic is on Sheet 3.
  - Electrical Schematic Notes are on Sheet 4.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.



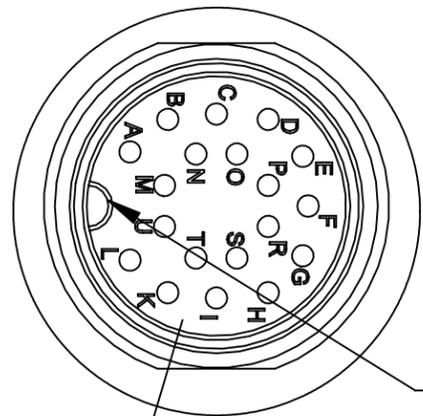
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DRAWN BY: S. Yang, 06/19/2020		TITLE	
CHECKED BY: W. Berrocal, 10/26/20		Compact Discrete Control Module, NPN, Right Angle Locked-Unlocked Sensor Cables	
PROJECT # 190203-1	SHEET 1 OF 4	SCALE 1:1	SIZE B
DRAWING NUMBER 9630-20-CV14NRXM CV10NT		REVISION 06	

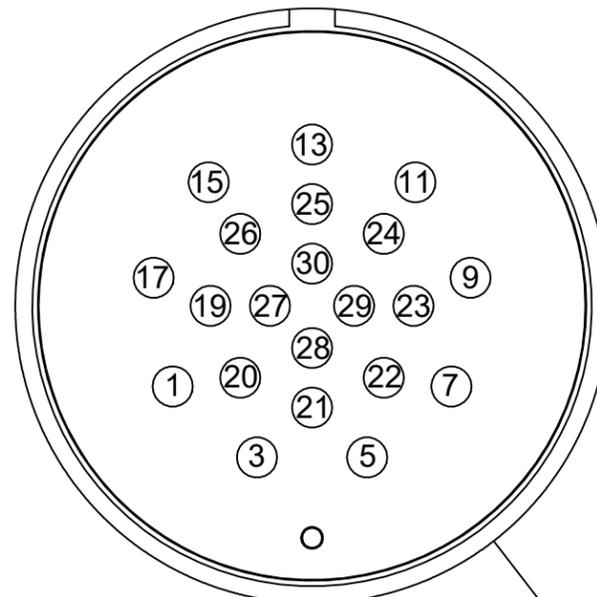
Notes:

- 1. WARNING: Tool Release Will Occur with actuation of the Unlatch Valve Manual Override. Use of the valve manual override is restricted to contingency situations. The tool changer and associated tool should be in a stand or storage location prior to actuation of the manual override.**
- 2. NOTICE: Actuation of valve override buttons requires very little travel (~1mm) and only a small amount of force. Applying excess force can damage the solenoid or cause override button to stick in one position. Use non-sharp object, similar to ball nose 1.3mm Allen key, to gently depress the override button.**

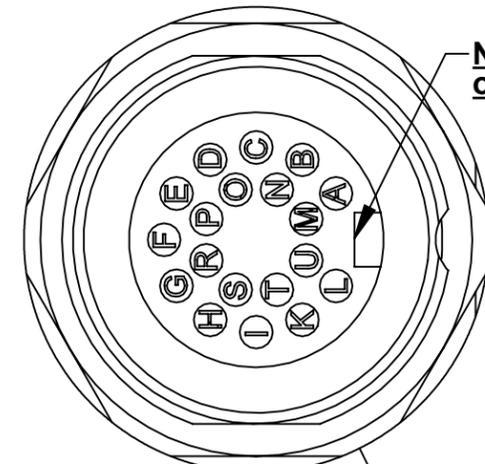


Note key orientation

DETAIL B  
SCALE 3 : 1

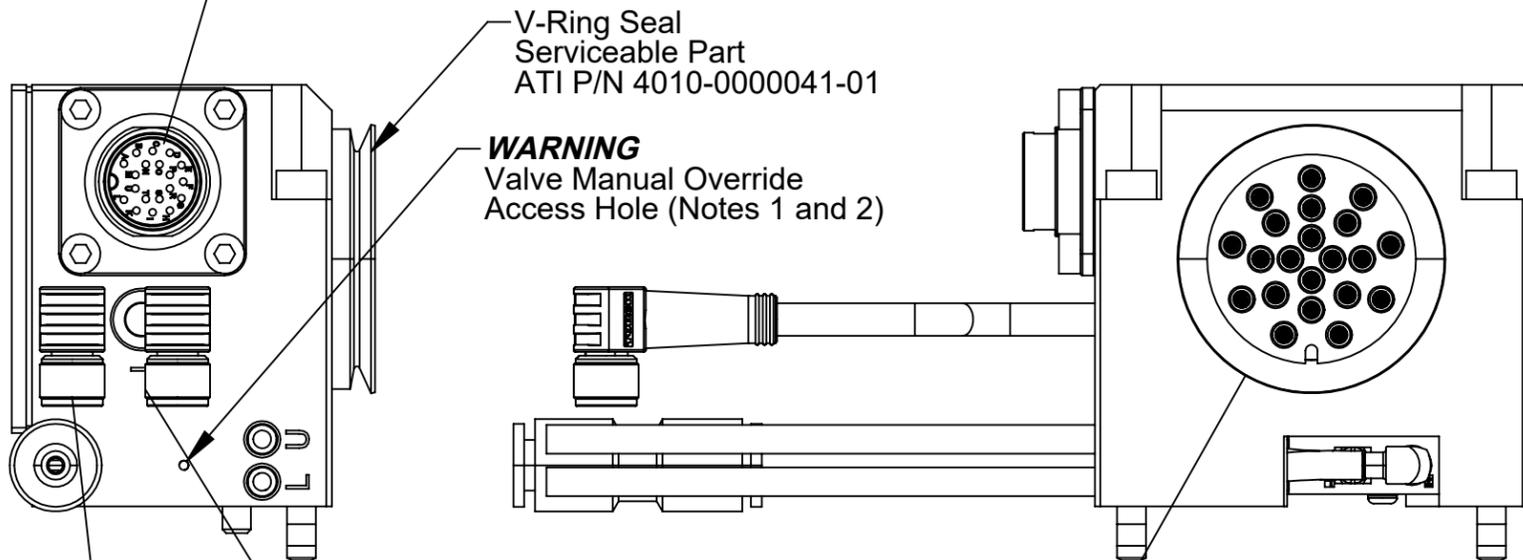


DETAIL C  
SCALE 2 : 1



Note key orientation

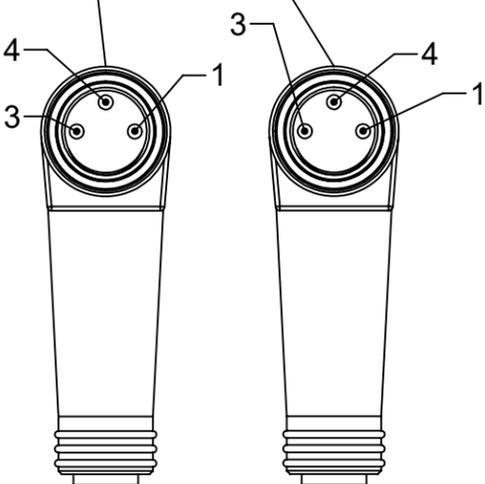
DETAIL E  
SCALE 3 : 1



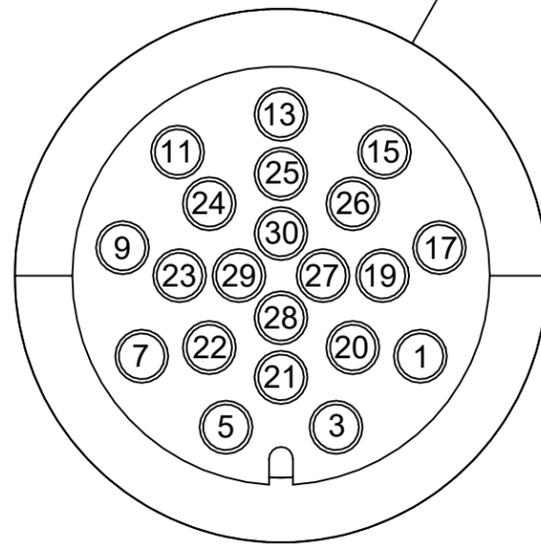
V-Ring Seal  
Serviceable Part  
ATI P/N 4010-0000041-01

**WARNING**  
Valve Manual Override  
Access Hole (Notes 1 and 2)

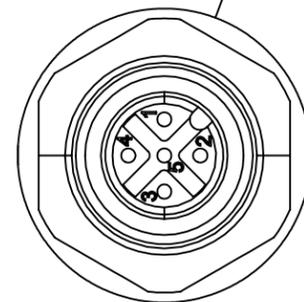
Tool ID Window and Gasket  
Serviceable Parts  
ATI P/N 3700-20-11570 and 3700-20-5622



L/U 3-Pin M8 Female  
Connectors  
SCALE 2 : 1



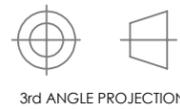
DETAIL A  
SCALE 2 : 1



DETAIL D  
SCALE 2 : 1

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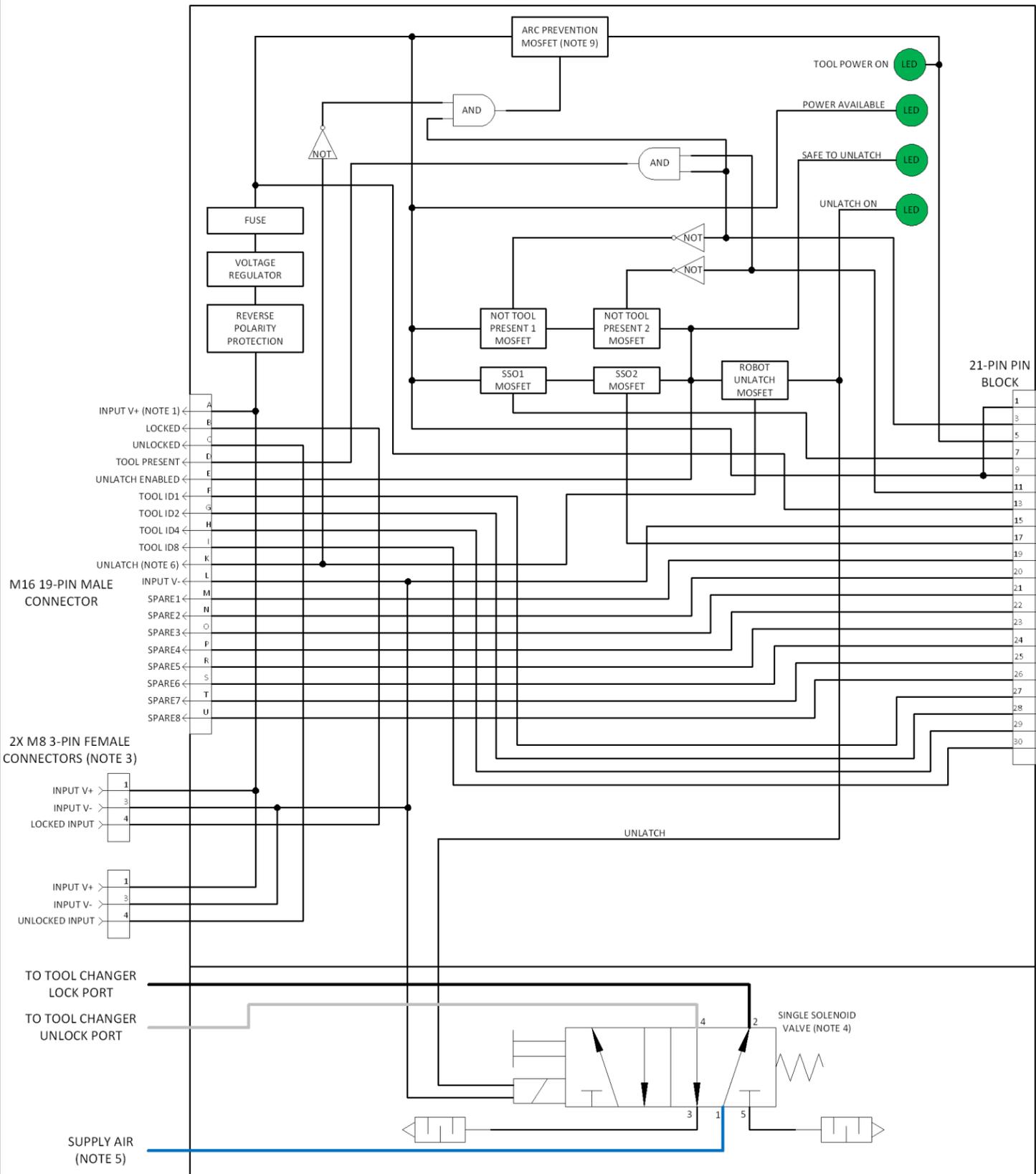


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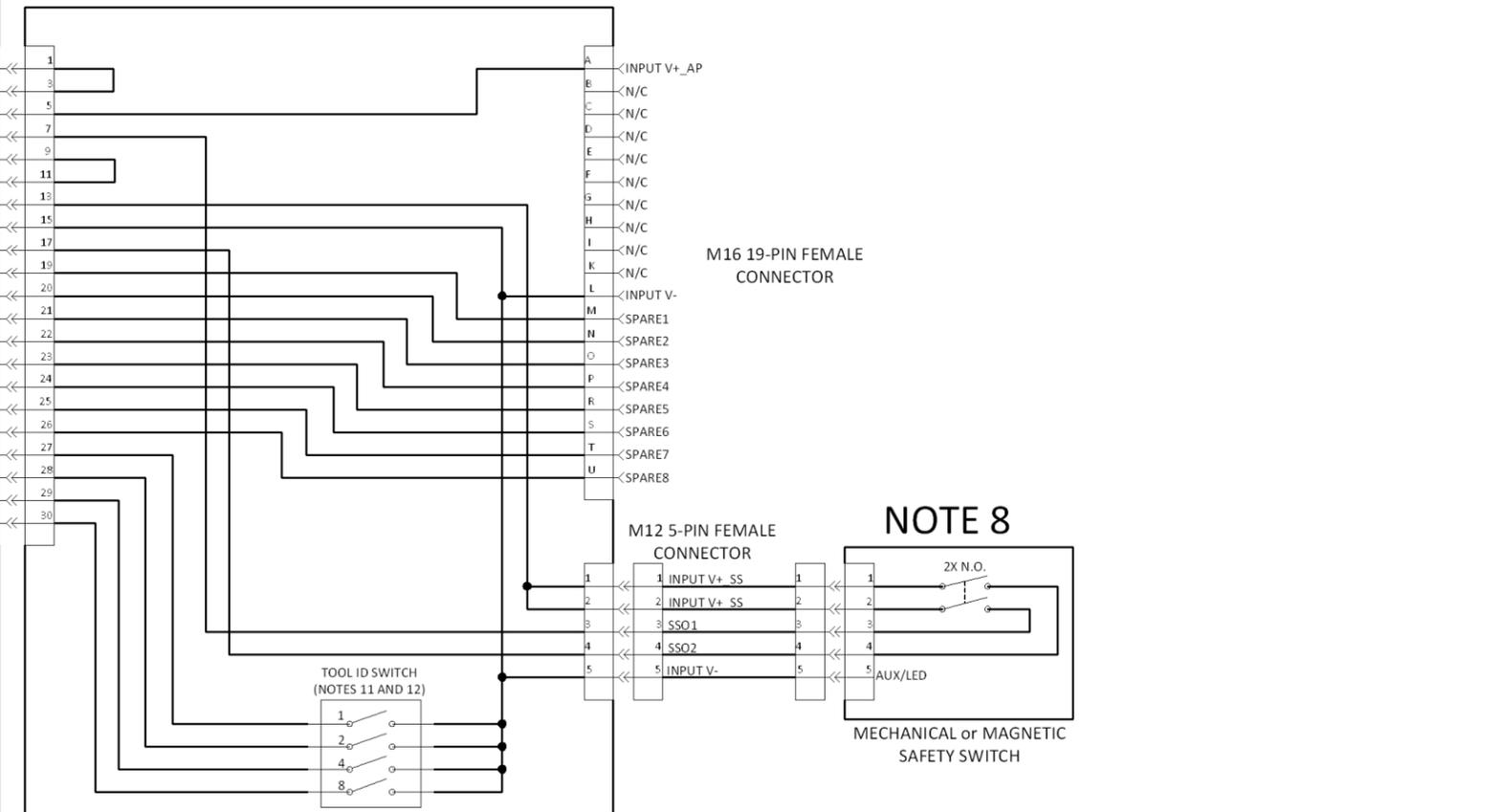
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CHECKED BY: W. Berrocal, 10/26/20		Compact Discrete Control Module, NPN, Right Angle Locked-Unlocked Sensor Cables	
PROJECT # 190203-1	SHEET 2 OF 4	SCALE 1:1	SIZE B
DRAWING NUMBER 9630-20-CV14NRxM CV10NT		REVISION 06	

9120-CV14NRx-M



9120-CV10N-T



Notes:  
1. Electrical Schematic notes are on Sheet 4.

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PROJECT # 190203-1	SHEET 3 OF 4	SCALE 1:1	SIZE B
DRAWING NUMBER 9630-20-CV14NRxM CV10NT		REVISION 06	

Notes:

1. Input current (Pin A of the M16 connector) is limited to 4A. Input voltage is limited to 24V +20%/-10%.
2. Current and voltage on Spare Signals 1-8 are limited to 3A, 50V.
3. The CV14NRx Master module is designed to work with NPN Locked and Unlocked sensors and a NPN unlatch output. The Unlatch Enabled and Tool Present inputs are also also NPN. Note: The Locked and Unlocked sensors are supplied with the Tool Changer.
4. The CV14NRx Master module is equipped with a single solenoid 5-port, 2-position valve with spring return. The valve's purpose is to lock and unlock the Tool Changer. Because this is a single solenoid valve, the valve will default to the lock state when electrical power is lost.
5. The valve must be supplied with clean, dry air filtered to 40 microns. The air supply pressure must be between 60 and 100 psi [.41 MPa to .69 MPa]. A 6mm to 4mm reducer fitting is attached to the end of the valve air supply fitting.
6. The CV14NRx Master module is designed to prevent an accidental tool unlatch. The unlatch command will only be executed if the Safety Switch inputs, SSO1 and SSO2, are both true, indicating that the Tool is in the Tool Stand.
7. The CV14NR Master is equipped with a bypass circuit that will allow an unlatch command to be executed when NO TOOL is present, as indicated by the two Tool Present signals.
8. Use a safety rated mechanical or magnetic limit switch with two Normally Open contacts. The contacts should only close when the Tool is nested safely in the Tool Stand. The switch must be connected as indicated in the schematic.
9. The CV14NR Master is equipped with Arc Prevention circuitry that protects the electrical contacts against arcing when coupling and uncoupling. The Arc Prevention circuit will turn power on when Unlatch is true and the Tool Present 1 signal is true.
10. The CV14NR Master is equipped with four LEDs indicating the following:
  1. "POWER": Power to the Master is available
  2. "TOOL POWER ON": Arc prevention has turned on power to the Tool
  3. "SAFE TO UNLATCH": The conditions for a safe unlatch have been met
  4. "UNLATCH ON": The unlatch output to the valve is active
 See the product manual for additional information.
11. Table 1 shows a detailed pinout of the Master side M16 Male Connector.
12. The Tool ID circuit is rated to 30V, 100mA. See Table 2 for Tool ID binary output. The Tool ID common is Input V-.

**TABLE 1: MASTER SIDE M16 19-PIN CONNECTOR PINOUT**

Connector Pin	Signal Name
A	Input V+ (24V)
B	Locked
C	Unlocked
D	Tool Present
E	Unlatch Enabled
F	Tool ID1
G	Tool ID2
H	Tool ID4
I	Tool ID8
K	Unlatch
L	Input V- (0V)
M	Spare 1
N	Spare 2
O	Spare 3
P	Spare 4
R	Spare 5
S	Spare 6
T	Spare 7
U	Spare 8

**TABLE 2: TOOL ID BINARY OUTPUT**

Switch Selection	Pin	Pin	Pin	Pin
	I	H	G	F
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
A	1	0	1	0
B	1	0	1	1
C	1	1	0	0
D	1	1	0	1
E	1	1	1	0
F	1	1	1	1

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PROJECT # 190203-1	SHEET 4 OF 4	SCALE 1:1	SIZE B	DRAWING NUMBER 9630-20-CV14NRxM CV10NT
				REVISION 06