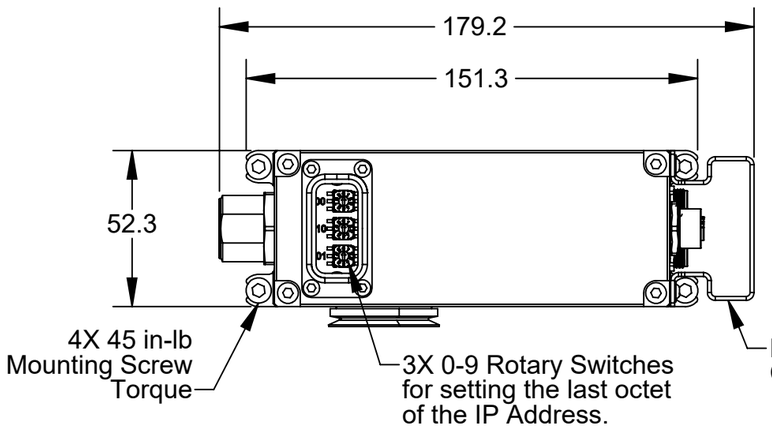
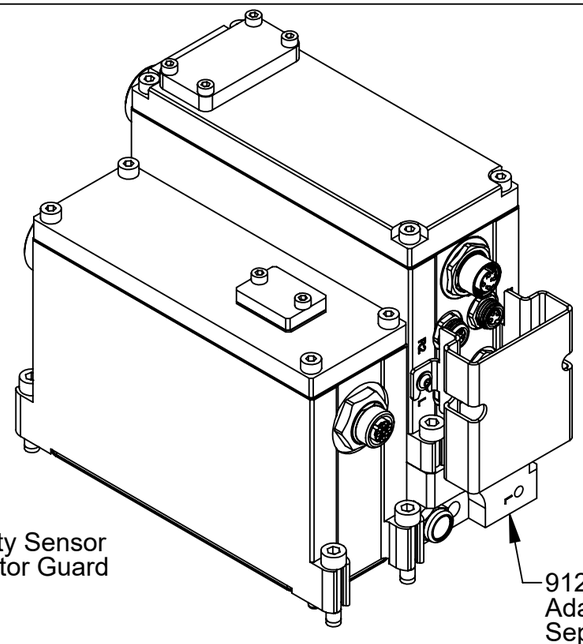
REV.	DESCRIPTION	INITIATOR	DATE
01	Production Release	VV	2/23/2024

9128-CYEX-M





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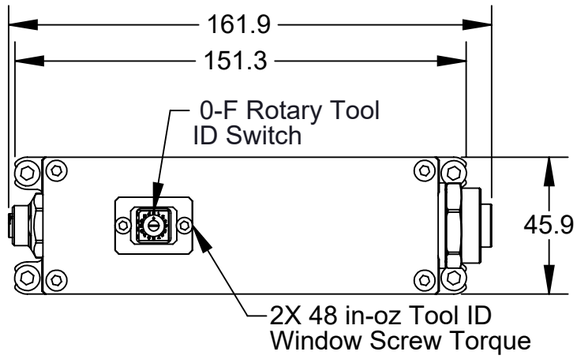

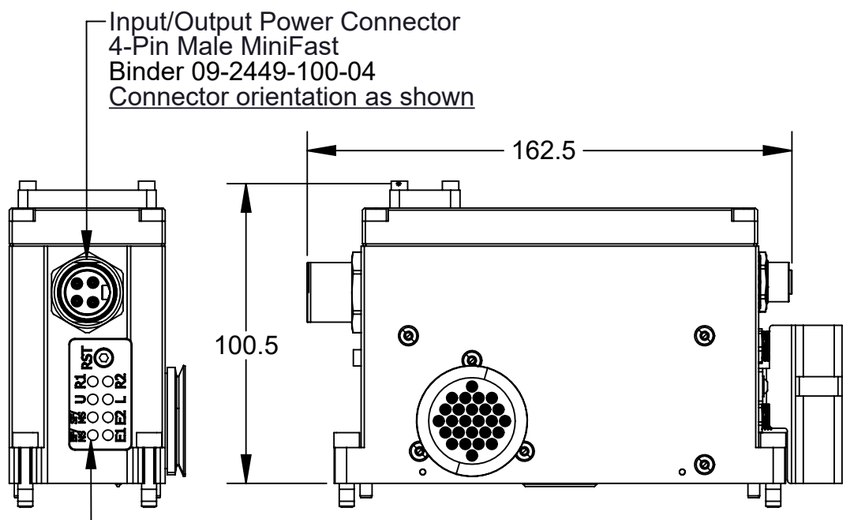

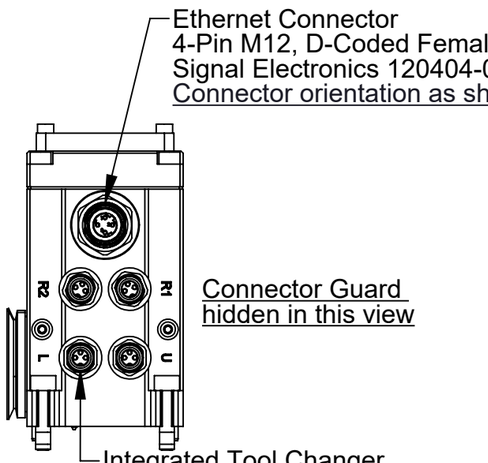

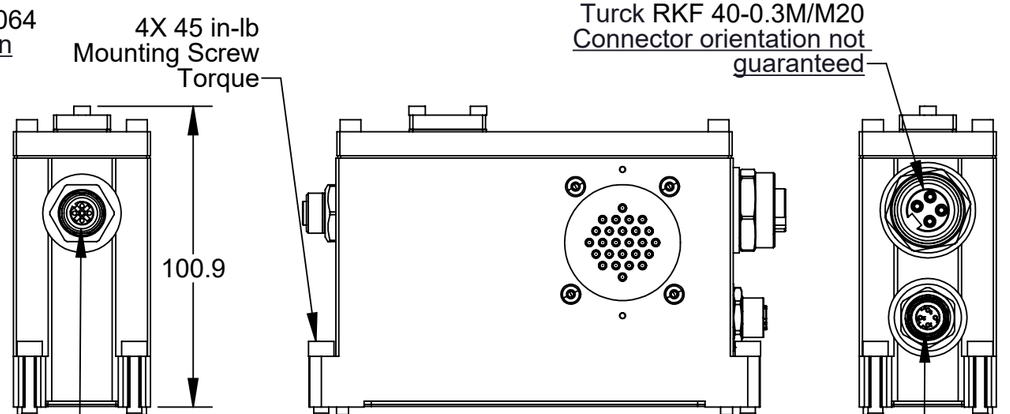

Notes:
1. Pin block signal assignments are shown on Sheet 2.
2. Connector pin designations are shown on Sheet 3.
3. Electrical schematic of Master and Tool is shown on Sheet 4. Schematic notes are on Sheet 5.
4. Connection to Safety Switches is outlined on Sheet 6.
5. Serviceable parts are shown on Sheet 7.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

ATI INDUSTRIAL AUTOMATION

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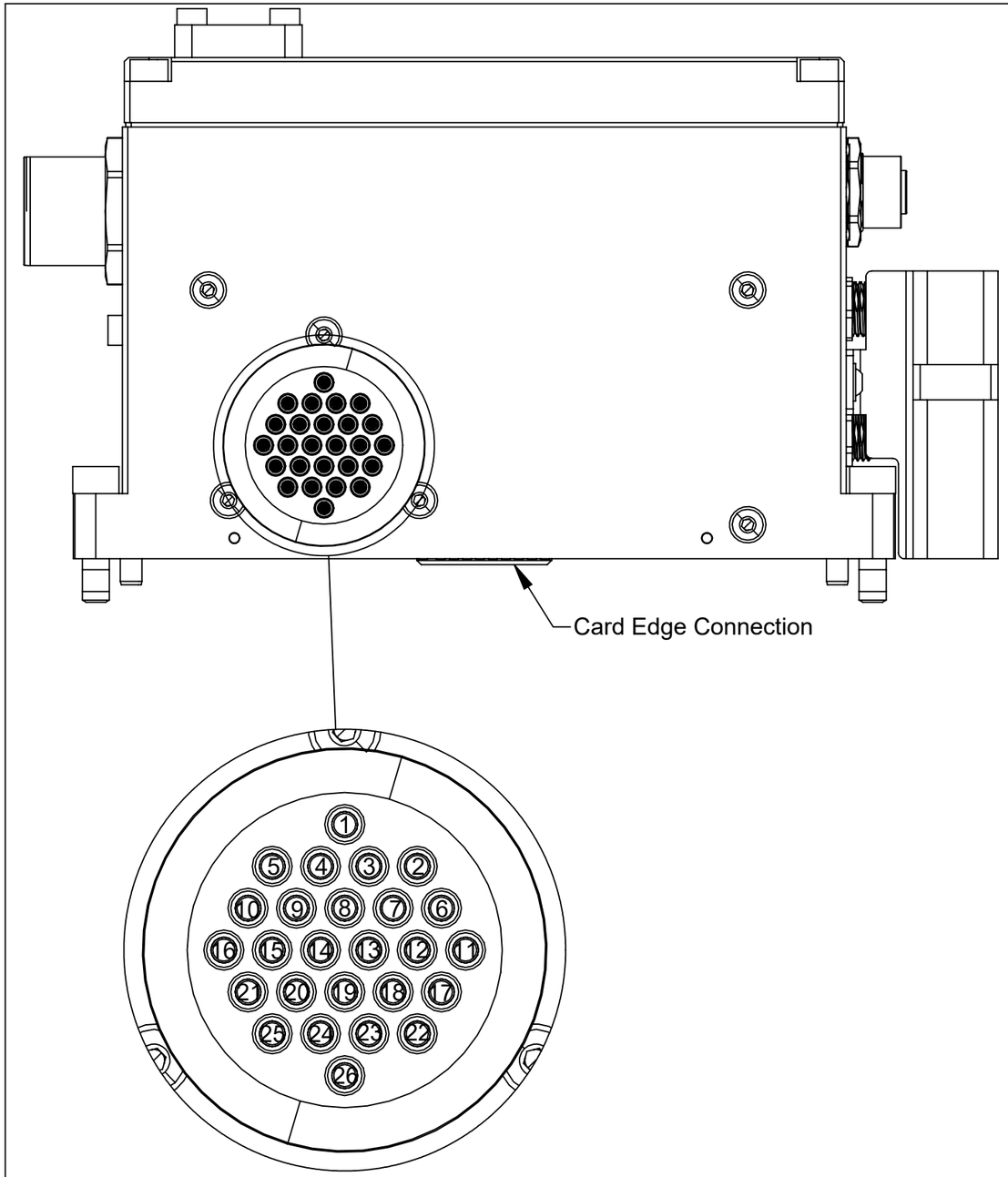
DRAWN BY: V.Vavilikolane, 07/08/2023

CHECKED BY: M.Newell, 08/03/2023

PROJECT # 230720-1 SHEET 1 OF 7

TITLE: Series 8 Ethernet Control Module

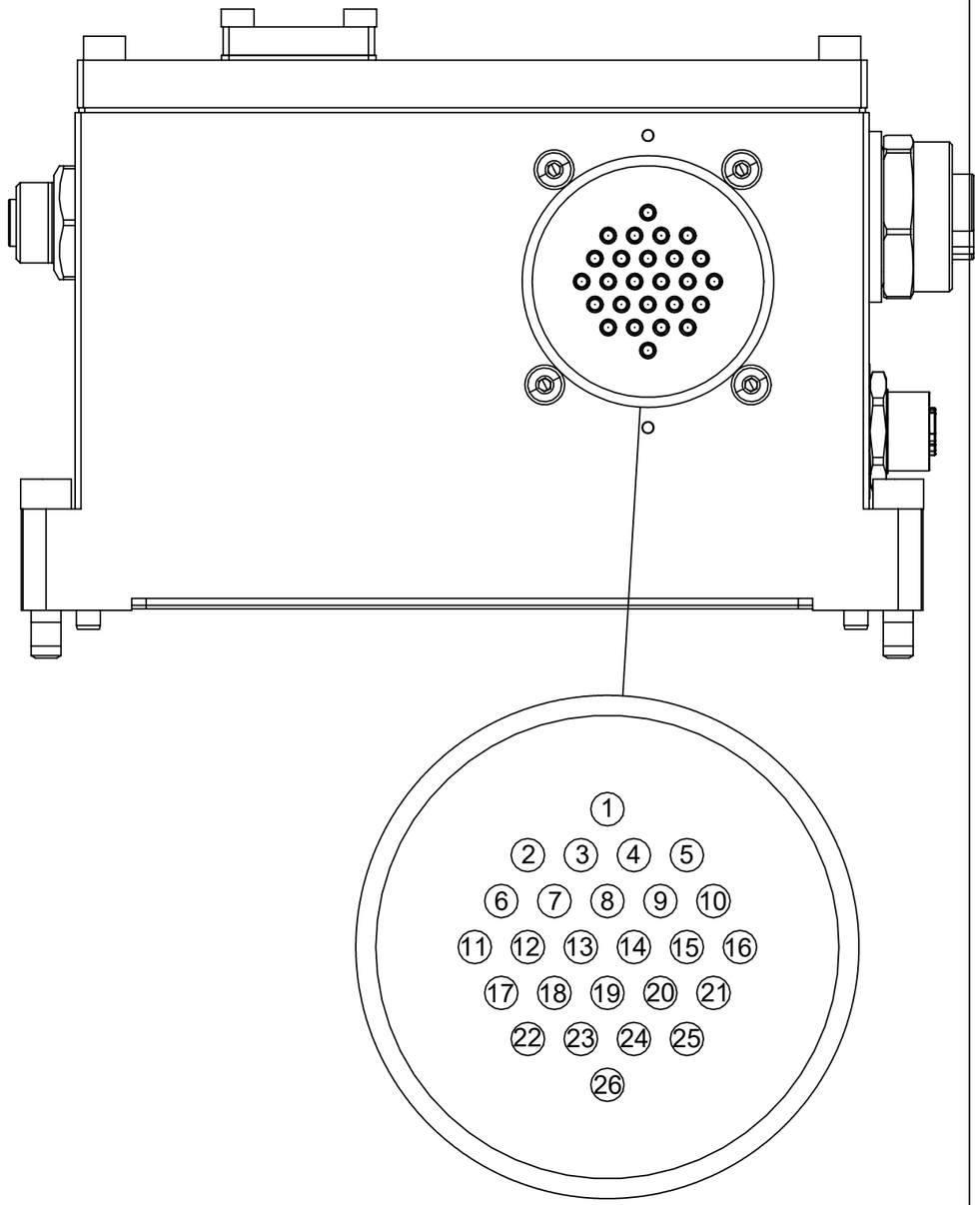
SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-CYEX	01



DETAIL A
SCALE 2 : 1

TABLE 1: PIN BLOCK PIN DESIGNATIONS

Pin	Signal
1	SSO2
2	1RX+
3	1RX-
4	TOOL ID1
5	AP_INPUT_V+
6	1TX-
7	1RX+
8	1RX-
9	TOOL ID2
10	INPUT V-
11	1TX+
12	1TX-
13	TOOL PRESENT
14	N/C
15	TOOL ID4
16	N/C
17	1TX+
18	ENET SHIELD
19	24V_SAFETY_SWITCH
20	TOOL ID8
21	OUTPUT V-
22	24V_GND
23	N/C
24	N/C
25	AP_OUTPUT_V+
26	SSO1



DETAIL B
SCALE 2 : 1

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PROJECT # 230720-1 SHEET 2 OF 7

TITLE: Series 8 Ethernet Control Module

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-CYEX	01

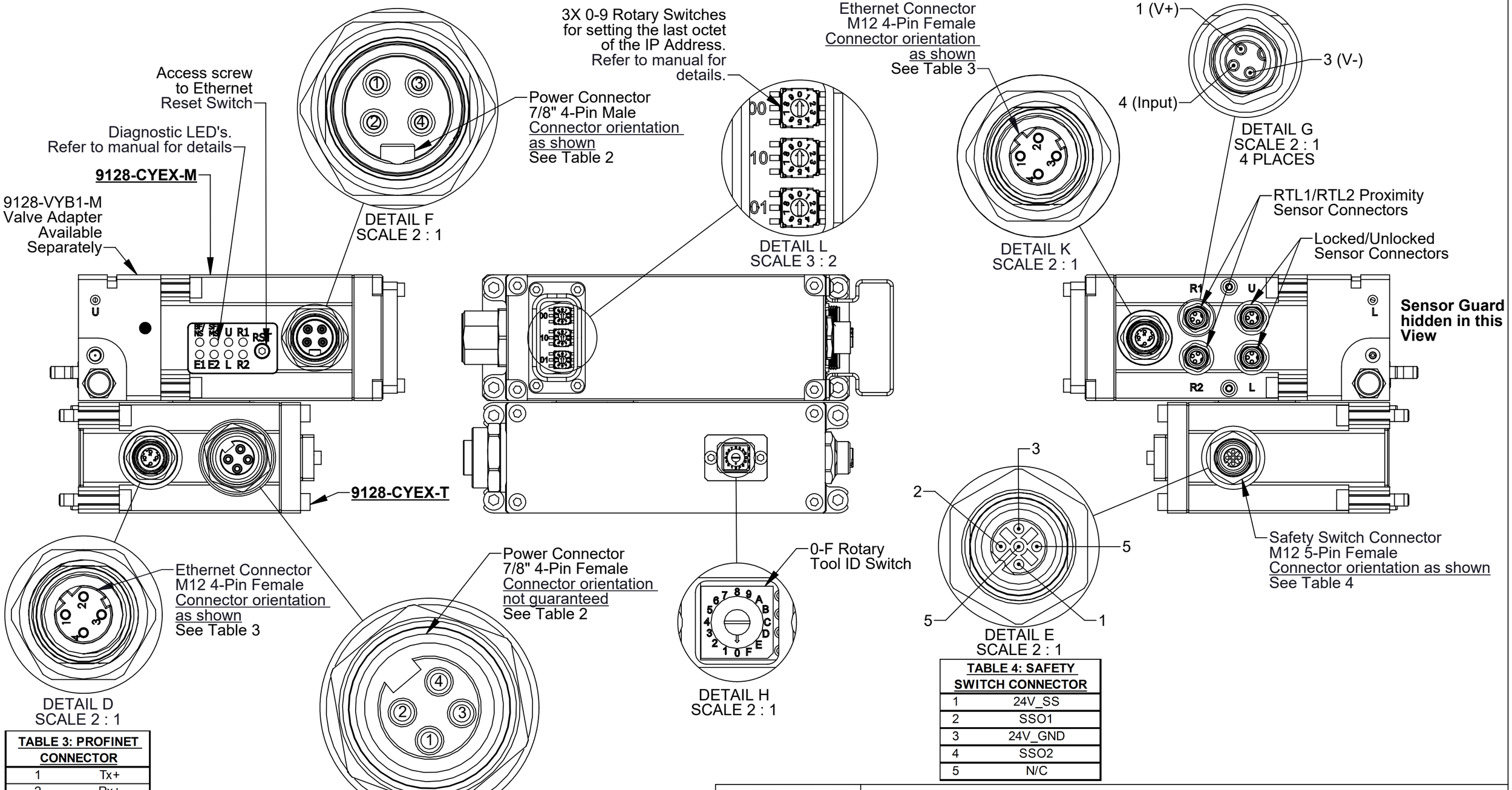

TABLE 3: PROFINET CONNECTOR	
1	Tx+
2	Rx+
3	Tx-
4	Rx-

TABLE 2: POWER CONNECTOR	
1	OUTPUT V+
2	INPUT V+
3	INPUT V-
4	OUTPUT V-

TABLE 4: SAFETY SWITCH CONNECTOR	
1	24V_SS
2	SSO1
3	24V_GND
4	SSO2
5	N/C

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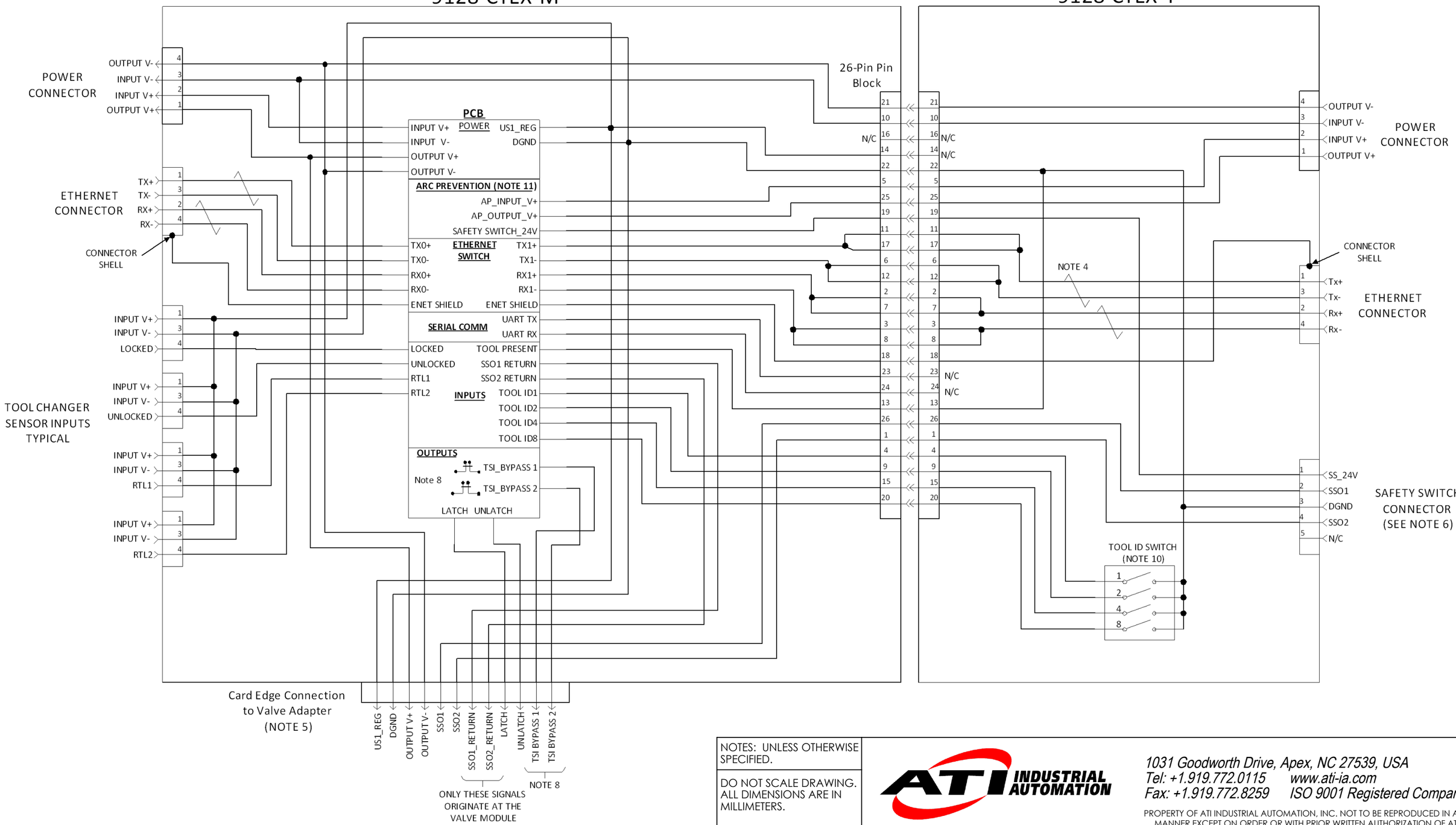
PROJECT # 230720-1 SHEET 3 OF 7

TITLE: Series 8 Ethernet Control Module

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-CYEX	01

ELECTRICAL SCHEMATIC



Notes:
1. Schematic notes are on Sheet 5.

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PROJECT # 230720-1 SHEET 4 OF 7

TITLE: Series 8 Ethernet Control Module

SCALE	SIZE	DRAWING NUMBER	REVISION
1:2	B	9630-20-CYEX	01

Notes:

1. The status of the Locked, Unlocked, and RTL1/RTL2 sensors are communicated in the bitmap and via the LED indicators on the side of the module. The CYEX Master module is compatible ONLY with PNP sensor.

2. The complete tool changer package comes equipped with external cables that are connected to the sensors.

3. Cables for Ethernet and Power are supplied by the customer.

4. The Ethernet (Tx and Rx) signals are transmitted over twisted pairs. The Tx and Rx pairs are passed redundantly over the 26-pin Pin Block.

5. The Card Edge connector is used to transmit the Latch and Unlatch command to a 9128-VY series Valve Module. The Valve Module contains a double solenoid pneumatic valve(s) that locks and unlocks the Tool Changer. The Valve is driven by US2 Power. NOTE: The CYEX is not compatible with single solenoid valve modules.

6. The Valve Module will only unlatch the Tool Changer if the Tool is nested in the Tool Stand as indicated by the two Safety Switch inputs, SSO1 and SSO2. The SSO1 and SSO2 Safety Switch inputs are transmitted from the Master Control Module to the Valve Module via the Card Edge connector.

7. Error and diagnostic bits are not shown on this schematic but are reported in the Master Bitmap. Refer to the product manual for details.

8. TSI_BYPASS 1 and TSI_BYPASS 2 are true only when the RTL1, RTL2, and TOOL_PRESENT signals are false, indicating that a Tool is not attached to the Master. Refer to the product manual for details.When both TSI_BYPASS 1 and TSI_BYPASS 2 are true, the Valve Module will allow the Tool Changer to unlatch without the SSO1 and SSO2 safety switch input.

9. See the notes on Sheet 6 for details regarding compatible Safety Sensors and single and series connection of the Safety Sensors. Note: The Safety Sensor(s) is powered by INPUT power.

10. The Tool ID I/O is reported in the Master Bitmap. Refer to the Product Manual for more information.

11. The Arc Prevention Circuit turns off INPUT and OUTPUT Power during coupling and uncoupling of the Tool Changer. The switching function is controlled by the Ethernet Master PCB. The TOOL PRESENT input is used to ensure that the spring/contact pins are touching when power is turned on. Refer to the manual for additional information.

12. Electrical Rating:
    - INPUT POWER: 4A, 21.6V to 30V
    - OUTPUT POWER: 7A, 20V to 30V

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PROJECT # 230720-1 SHEET 5 OF 7

TITLE: Series 8 Ethernet Control Module

SCALE	SIZE	DRAWING NUMBER	REVISION
2:3	B	9630-20-CYEX	01

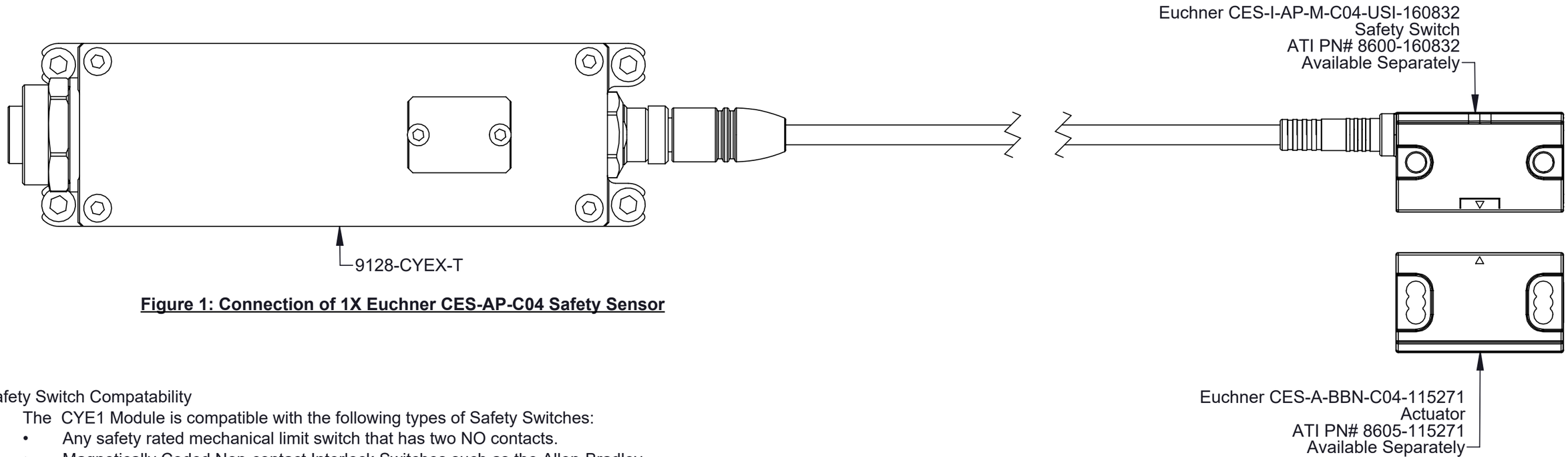

Figure 1: Connection of 1X Euchner CES-AP-C04 Safety Sensor

Safety Switch Compatability

1. The CYE1 Module is compatible with the following types of Safety Switches:
   - Any safety rated mechanical limit switch that has two NO contacts.
   - Magnetically Coded Non-contact Interlock Switches such as the Allen-Bradley Ferroguard or Sipha switches (must have two NO contacts).
   - PLe Rated RFID Based Safety Switches with two safety outputs. RFID based Safety Switches with both single and series connection are supported - refer to manual for specific models and connection instructions.

IMPORTANT: To achieve a PLd safety rating, the CYE1 module must be used with a VY Series PLd certified Valve Module and a PLe Rated Safety Switch. See the manual for details.

Connection of Single Safety Switch

2. If only a single Safety Switch is required, ATI recommends the use of the Euchner CES-I-AP-M-C04-USI-160832 Safety Switch (ATI P/N 8600-160832). Reference Figure 1 for connection details and component part numbers.

Series Connection of 2 to 4 Safety Switches:

3. If two to four Safety Switches are required to be connected in series then ONLY series connected Safety Switches can be used (see the manual for details). IMPORTANT: THE CYE1 TOOL CANNOT SUPPORT MORE THAN FOUR (4) SAFETY SWITCHES CONNECTED IN SERIES.
4. Check with ATI before selecting a switch that is not suggested in the manual.

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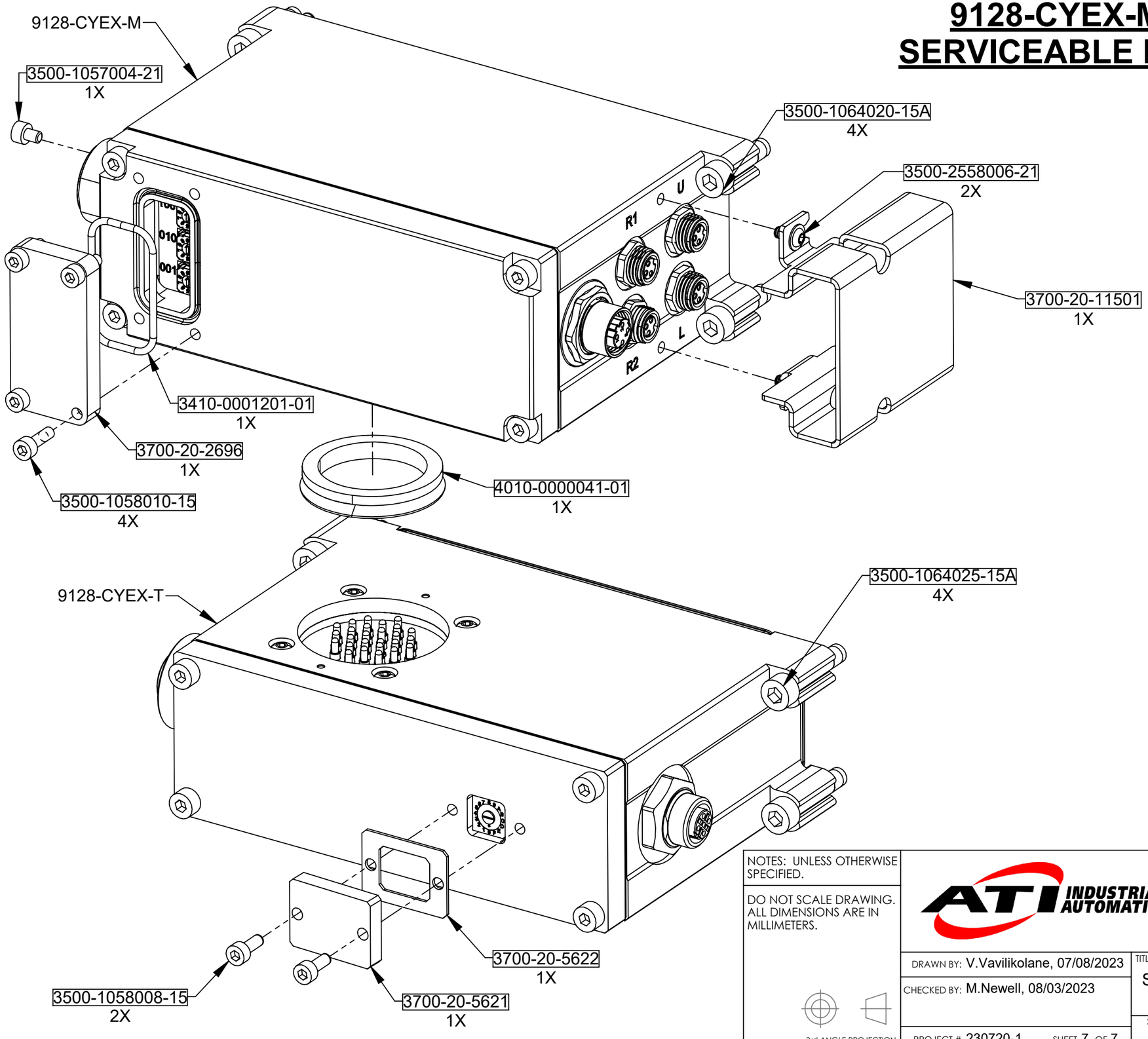
PROJECT # 230720-1 SHEET 6 OF 7

TITLE: Series 8 Ethernet Control Module

SCALE	SIZE	DRAWING NUMBER	REVISION
1:5	B	9630-20-CYEX	01

9128-CYEX-M/T
SERVICEABLE ITEMS



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PROJECT # 230720-1 SHEET 7 OF 7

TITLE: Series 8 Ethernet Control Module

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