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C. Control and Signal Modules

VG3—Discrete PROFIBUS Pass-through Module

1. Product Overview

The Discrete PROFIBUS Pass-through Modules are required to provide a means for the customer to communicate through the Tool Changer. Refer to Section 8—Drawing or wiring information.

PROFIBUS connectors are provided for interfacing on the Master and Tool modules. When the Tool Changer is coupled, the Master and Tool electrical modules communicate with each other using a spring loaded pin block. A flexible boot surrounds the pin block to seal the connection from moisture and liquid while coupled.

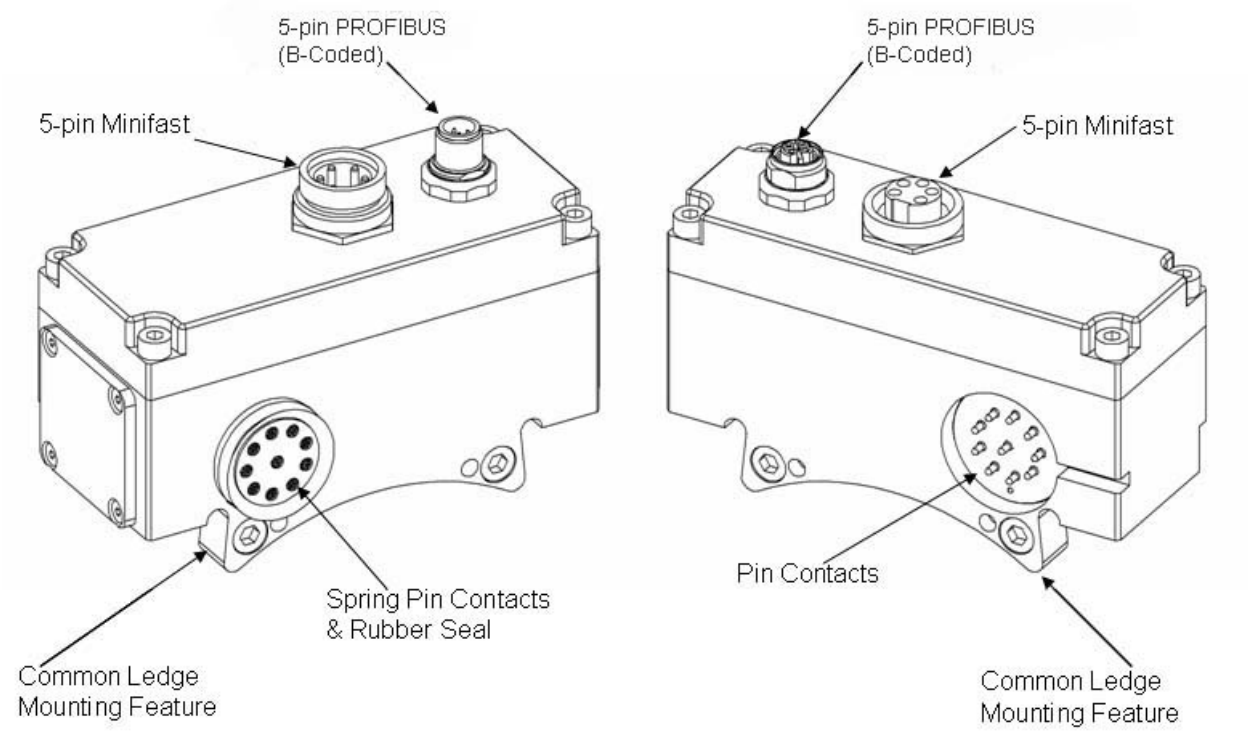


Figure 1.2—Discrete PROFIBUS Pass-through Module (VG3)

2. Installation

The Discrete PROFIBUS Pass-through Modules are typically installed by ATI prior to shipment. The steps below outline the field installation or removal as required.

DANGER: Power and air should always be removed prior to maintenance or repair.

2.1 Installing

1. It may be necessary to clean the mounting surface on the Tool Changer prior to installing the module in order to remove any debris that may be present.
2. Apply Loctite-222® (or similar) thread locker to the socket head cap screws and tighten using a hex key.

2.2 Removal

1. All customer connections up to the module need to be disconnected.
2. Remove the socket head cap screws and pull the module off the Tool Changer.

3. Operation

VG3-M Discrete PROFIBUS Pass-through Module passes signals to the tool module when coupled.

4. Maintenance

Contact pins on the control module should be inspected and cleaned periodically to ensure electrical continuity is maintained. Care should be taken not to bend or pull out the contacts when cleaning. Do not use an abrasive media to clean the contact pins as erosion may occur to the contact surface.

5. Troubleshooting

Symptom	Possible Cause / Correction
Loss of Communication	Check/Replace cabling up- and down-stream of the Tool Changer modules. Inspect Discrete PROFIBUS Pass-through Module contact pins for debris/wear.

6. Recommended Spare Parts

Assembly	Part Number	Description
VG3 Discrete PROFIBUS Pass-through Module Master	9120-VG3-M	Discrete PROFIBUS Pass-through Module Master
	4010-0000030-01	V-Ring
	9005-20-1198	Master Cleat Sub-assembly
VG3 Discrete PROFIBUS Pass-through Module Tool	9120-VG3-T	Discrete PROFIBUS Pass-through Module Tool
	9005-20-1199	Tool Cleat Sub-assembly

7. Specifications

Discrete PROFIBUS Pass-through Module

VG3-M/VG3-T Discrete PROFIBUS Pass-through Module with signal pass-through for customer use.

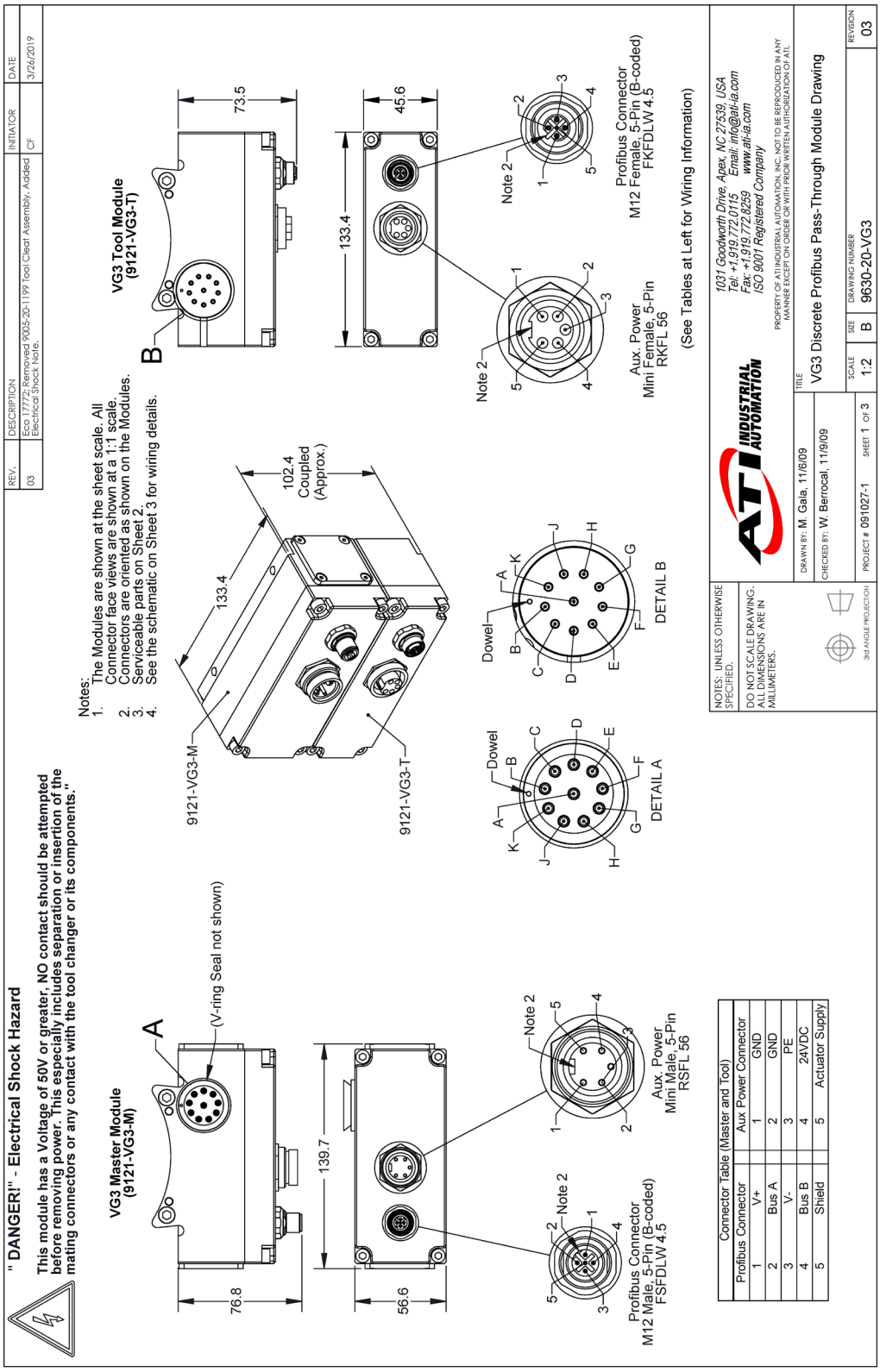
Weight (coupled) 2.66 lbs. (1.21 kg) VG3-M, VG3-T

Pass-Through Signals

VG3-M, VG3-T 10 @ 4 Amp, 24VDC Turck Minifast 5-pin Male RSFL-56
Master Side (Power)
Turck Minifast 5-pin Female RKFL-56
Tool Side (Power)

PROFIBUS 5-pin Male FSFDLW4.5 B-coded
Master Side
PROFIBUS 5-pin Female FKFDLW4.5 B-coded
Tool Side

8. Drawings


" 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."
REV. | DESCRIPTION | INITIATOR | DATE
03 | Eco 17772: Removed 9005-20-1199 Tool Cleat Assembly, Added Electrical Shock Note. | CF | 3/26/2019
VG3 Master Module (9121-VG3-M)
VG3 Tool Module (9121-VG3-T)
(V-ring Seal not shown)
Notes:
1. The Modules are shown at the sheet scale. All
2. Connector face views are shown at a 1:1 scale.
3. Connectors are oriented as shown on the Modules.
4. Serviceable parts on Sheet 2.
See the schematic on Sheet 3 for wiring details.
9121-VG3-M
9121-VG3-T
133.4
102.4 Coupled (Approx.)
DETAIL A
DETAIL B
Dowel
Note 2
Aux. Power Mini Male, 5-Pin RSFL 56
Aux. Power Mini Female, 5-Pin RKFL 56
Profibus Connector M12 Male, 5-Pin (B-coded) FSFDLW 4.5
Profibus Connector M12 Female, 5-Pin (B-coded) FKFDLW 4.5
(See Tables at Left for Wiring Information)
Connector Table (Master and Tool)
Profibus Connector | Aux Power Connector
1 V+ | 1 GND
2 Bus A | 2 GND
3 V- | 3 PE
4 Bus B | 4 24VDC
5 Shield | 5 Actuator Supply
NOTES: UNLESS OTHERWISE SPECIFIED.
DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.
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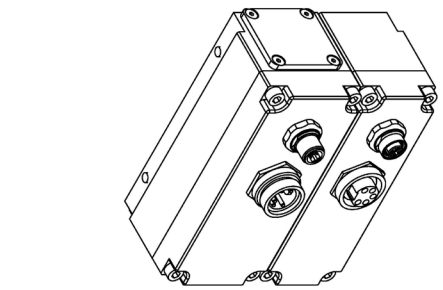
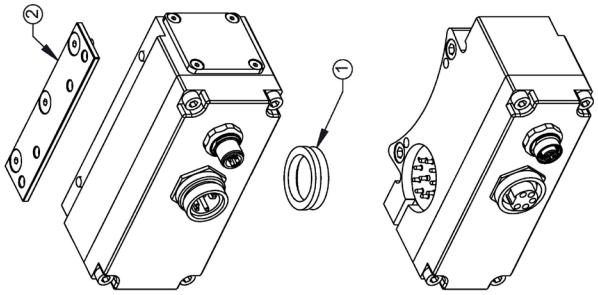
DRAWN BY: M. Gala, 11/6/09
CHECKED BY: W. Berrocal, 11/9/09
PROJECT # 091027-1
SHEET 1 OF 3
TITLE
VG3 Discrete Profibus Pass-Through Module Drawing
SCALE 1:2
SIZE B
DRAWING NUMBER 9630-20-VG3
REVISION 03
3rd ANGLE PROJECTION

Serviceable Parts





ITEM NO.	QTY.	PART NUMBER	DESCRIPTION
1	1	4010-0000030-01	V-Ring Seal
2	1	9005-20-1198	Master Cleat Sub-Assembly

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DRAWN BY: M. Gala, 11/6/09

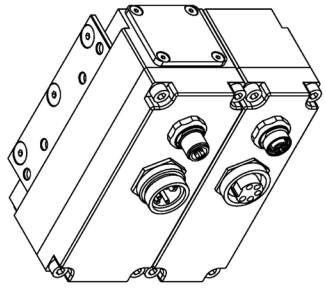
CHECKED BY: W. Berrocal, 11/9/09

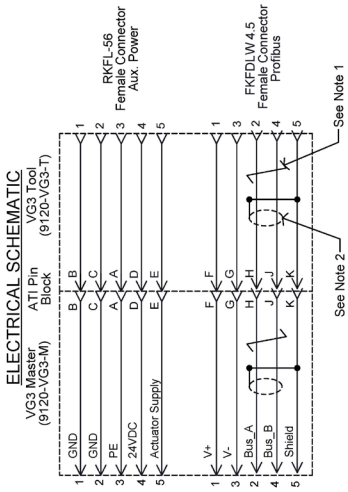
3rd ANGLE PROJECTION

TITLE: VG3 Discrete Profibus Pass-Through Module Drawing

SCALE: 1:2 | SIZE: B | DRAWING NUMBER: 9630-20-VG3 | REVISION: 03

PROJECT # 091027-1 SHEET 2 OF 3





Electrical Schematic Notes:
1. Pins 2 & 4 of the Profibus connectors are twisted.
2. Twisted wire pairs are shielded. The individual wire pair shields are connected to Pin 5 of the Profibus connector. The shield is passed from Master to Tool on Pin K of the 10-Pin Pin Block.

NOTES: UNLESS OTHERWISE SPECIFIED.

DO NOT SCALE DRAWING. ALL DIMENSIONS ARE IN MILLIMETERS.

3rd ANGLE PROJECTION

DRAWN BY: M. Gala, 11/6/09

CHECKED BY: W. Berrocal, 11/9/09

PROJECT # 091027-1 SHEET 3 OF 3

TITLE: VG3 Discrete Profibus Pass-Through Module Drawing

SCALE 1:2 | SIZE B | DRAWING NUMBER 9630-20-VG3 | REVISION 03

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