Analog and Digital I/O Conversion Module (Cat 1492-CM1771-LA003)

I. Description

This I/O Conversion Module provides for the conversion of (1) 1771, 4 Ch Analog I/O module to be converted to (1) 1756, 8 Ch Analog I/O module and consists of the following:

(1) 1771 Module (4ch) to (1) 1756 Module (8ch)

(1) Conversion Module: 1492-CM1771-LA003
(1) Cable: 1492-CONACAB005E, 1492-CONACAB005E8V, or 1492-CONACAB005E8C (Table 2)
(1) Conversion Mounting Assembly: 1492-MUA… (Table 1)

This I/O Conversion Module provides for the conversion of (1) 1771, 4 Ch Analog I/O module to be converted to (1) 1756, 6 Ch Analog I/O module and consists of the following:

(1) 1771 Module (4ch) to (1) 1756 Module (6ch)

(1) Conversion Module: 1492-CM1771-LA003
(1) Cable: 1492-CONACAB005E (Table 2)
(1) Conversion Mounting Assembly: 1492-MUA… (Table 1)

This I/O Conversion Module also provides for the conversion of (2) 1771 Digital I/O modules that also use the 1771-WC swing arm. In this case, this I/O conversion modules provide for the conversion of (2) 1771, 4 pt. Digital I/O modules to be converted to (1) 1756, 8 pt. Digital I/O module and consists of the following:

(2) 1771 Module (4pt) to (1) 1756 Module (8pt)

(2) Conversion Module: 1492-CM1771-LA003
(1) Cable: 1492-C005005E8V or 1492-C005005E8C (Table 2)
(1) Conversion Mounting Assembly: 1492-MUA… (Table 1)

This I/O Conversion Module also provides for the conversion of (2) 1771 Digital I/O modules that also use the 1771-WC swing arm. In this case, this I/O conversion modules provide for the conversion of (2) 1771, 8 pt. Digital I/O modules to be converted to (1) 1756, 16 pt. Digital I/O module and consists of the following:

(2) 1771 Module (8pt) to (1) 1756 Module (16pt)

(2) Conversion Module: 1492-CM1771-LA003
(1) Cable: 1492-C005005XS (Table 2)
(1) Conversion Mounting Assembly: 1492-MUA… (Table 1)

These conversions are accomplished without the removal of any field wires from the existing 1771 Swing Arms. The existing 1771 Swing Arms fit directly onto the edge connector of the 1492 Conversion Modules. For the Analog I/O conversions, one end of the 1492 Cable has (1) connector for the Conversion Module and on the other end is (1) Removable Terminal Block (RTB) for the 1756 I/O module. For the Digital I/O conversions, one end of the 1492 Cable has (2) connectors, one for each of the (2) Conversion Modules and on the other end is (1) Removable Terminal Block (RTB) for the 1756 I/O module. See the photos below.

The I/O signals are routed through the 1492 Conversion Module(s) and the 1492 Cable to the appropriate terminals on the 1756 I/O module per the Wiring Diagrams in Section V. As standard, the 1492 Cables are 0.5M long, but we also offer a 1.0M cable length. Refer to the footnotes in Table 2 for further details.

⚠ WARNING

De-energize and lockout any and all power to all I/O field devices connected to the A-B 1771 I/O chassis, and the power to the 1771 I/O chassis itself. Ensure all power is de-energized and locked out to any device in the control cabinet where the conversion is to be performed. Ensure work is performed by qualified personnel.

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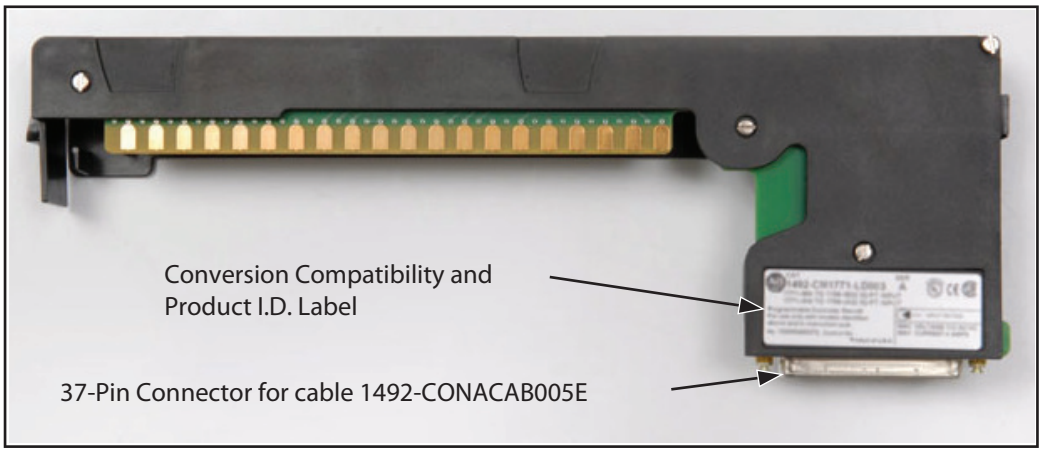

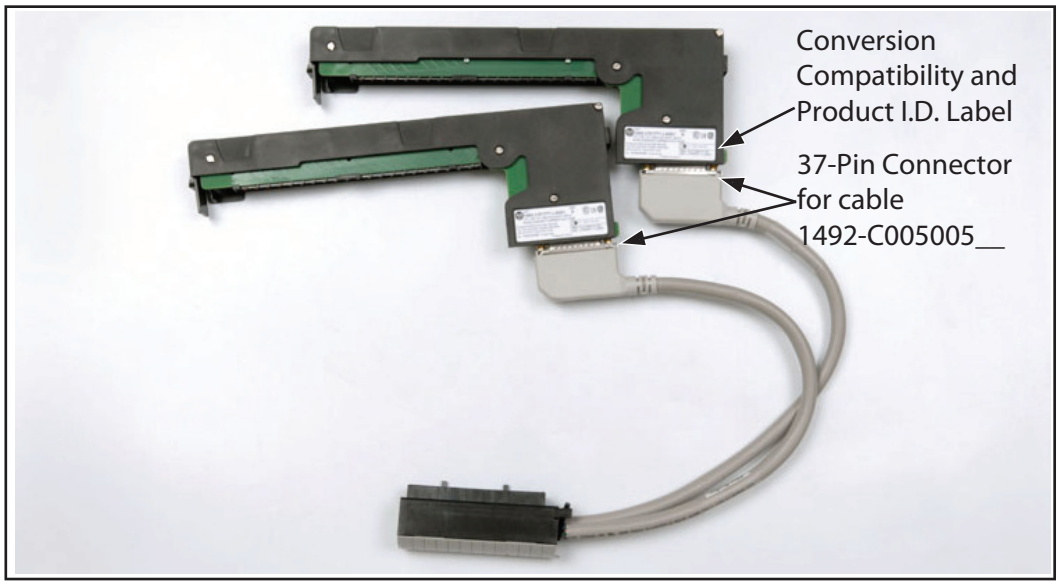

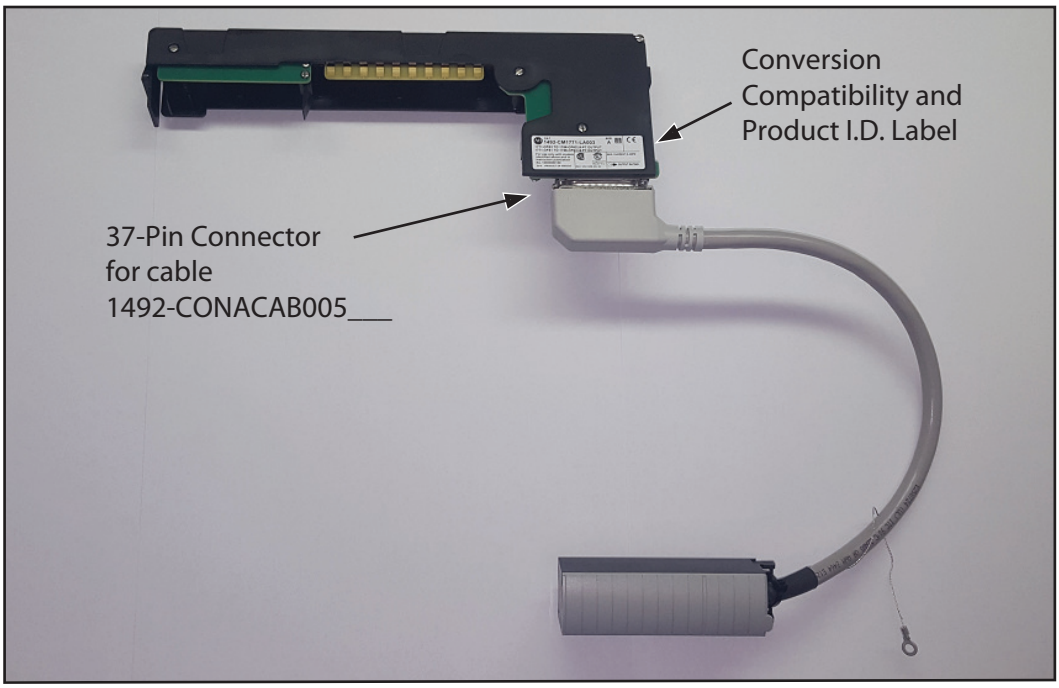

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II. Installation

The 1492 Conversion Modules must be installed in a 1492 Conversion Mounting Assembly (see Table 1 below). A complete System Installation Manual ships with the 1492 Conversion Mounting Assembly.

1) Determine the quantity of each type of 1771 I/O modules used in the 1771 I/O Chassis to be converted.
2) Select the applicable 1492 Conversion Modules from Table 2, Section III.
3) Review the Max Slots for I/O and Chassis Width data from the Table 1 below.
4) Select a 1756 I/O Chassis which has enough I/O Slots.
NOTE: (2) I/O slots are required in the 1756 Chassis for conversions where (1) 1771 I/O module converts to (2) 1756 I/O modules.
5) Select the 1492 Conversion Mounting Assembly which has enough Conversion Module slots.
NOTE: (2) Conversion Module slots are required in the 1492 Conversion Mounting Assembly for conversions where (2) 1771 I/O module convert to (1) 1756 I/O modules.
NOTE: The 1492 Conversion Mounting Assembly has the same Height & Width foot-print as the 1771 Chassis and is designed to use the same mounting hardware. The combined Depth of the 1492 Conversion Mounting Assembly with the 1756 Chassis mounted on top is 10.25 inches (Controller w/key) or 10.0 inches (Controller w/o key). Dimension drawings are included in the System Installation Manual that ships with the 1492 Conversion Mounting Assembly.

Table 1: Bulletin 1771 to 1756 Chassis Conversion

1771 Chassis				1756 Chassis			Conversion Mounting Assembly		
Cat. No.	Max Slots for I/O	Chassis Width② without Power Supply	Chassis Width② with Power Supply	Cat. No.	Max Slots for I/O	Chassis Width	Cat. No.	Max Slots for Conversion Modules	Chassis Width
1771-A1B	4	9.01	12.61	1756-A4	3	10.35	1492-MUA1B-A4-A7	4	9.01
				1756-A7	6	14.49			
1771-A2B	8	14.01	17.61	1756-A7	6	14.49	1492-MUA2B-A7-A10	8	14.01
				1756-A10	9	19.02			
1771-A3B1①	12	19.01		1756-A10	9	19.02	1492-MUA3-A10-A13	12	19.01
				1756-A13	12	23.15			
1771-A4B	16	24.01		1756-A13	12	23.15	1492-MUA4-A13-A17	16	24.01
				1756-A17	16	29.06			

Foot Notes:
① 1771-A3B is not listed as it is used for 19 inch wide instrumentation panels.

② Notice that the 1756 Chassis Width sometimes exceeds the 1771 Chassis Width, with or without the Power Supply. The Cover-Plate of the 1492 Conversion Mounting Assembly allows the 1756 Chassis to be Left justified, Right justified or Centered. A complete System Installation Manual ships with the 1492 Conversion Mounting Assembly.

III. Compatibility

1771 Analog I/O Module①	1756 Analog I/O Module①	1492 I/O Conversion Module	1492 Cable④	Wiring Diagram Page #
1771-OFE1	1756-OF8I	1492-CM1771-LA003	1492-CONACAB005E8V②	5
1771-OFE1	1756-OF6VI	1492-CM1771-LA003	1492-CONACAB005E②	6
1771-OFE2	1756-OF8I	1492-CM1771-LA003	1492-CONACAB005E8C②	7
1771-OFE2	1756-OF6CI	1492-CM1771-LA003	1492-CONACAB005E②	8
1771-OFE1 (Qty 2)	1756-OF8I	1492-CM1771-LA003	1492-C005005E8V③	9
1771-OFE2 (Qty 2)	1756-OF8I	1492-CM1771-LA003	1492-C005005E8C③	10
1771-IG (Qty 2) (Digital)	1756-IG16	1492-CM1771-LA003	1492-C005005XS③	11
1771-OG (Qty 2) (Digital)	1756-OG16	1492-CM1771-LA003	1492-C005005XS③	12

Foot Notes:

①To understand any issues concerning I/O module compatibility, refer to the Installation Manuals for the specific 1771 and 1756 I/O modules involved.

②The 3 numbers indicate the length of the 1492 Cable. Recommended cable lengths of 0.5M are shown. Additional cable lengths are as follows:
1.0M = 1492-CONACAB010E

③The 6 numbers indicate the cable length of each portion of the 1492 Cable. Recommended cable lengths of 0.5M / 0.5M are shown. Additional cable lengths are as follows:
1.0M / 1.0M = 1492-C010010
0.5M / 1.0M = 1492-C005010
1.0M / 0.5M = 1492-C010005

④These cables have a maximum operating voltage of 160VDC, 2A maximum per pin, 12A maximum per cable.

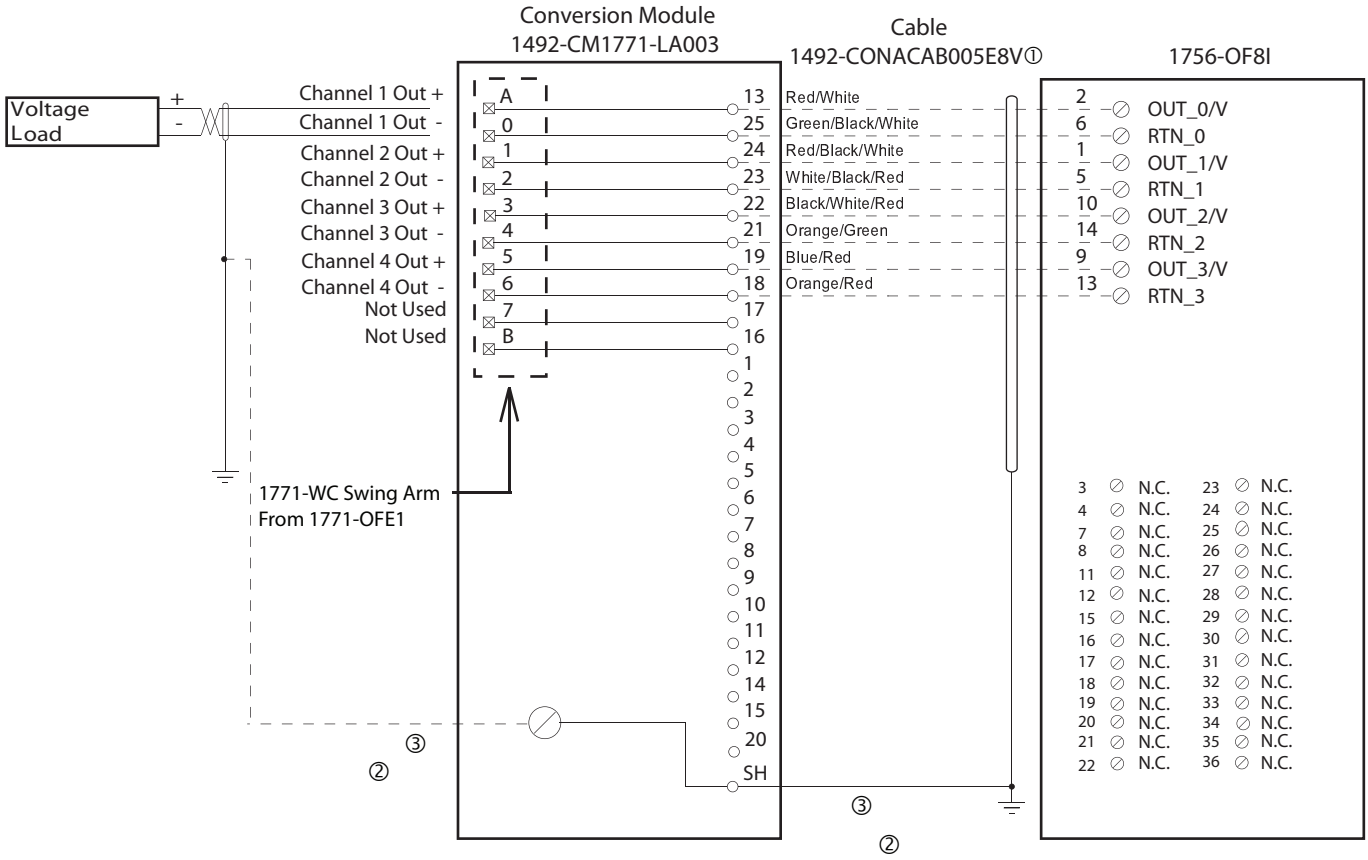
IV. Conversion Module Specifications

(Operating specifications are when installed in the Conversion System base / cover-plate assembly)

Specification	Value
Dimensions	11.81 in. (height) x 4.38 in. (depth) x 1.5 in. (width) 300 mm. (height) x 111.25 mm (depth) x 38.1 mm (width)
Approximate Shipping Weight	250.6 g (0.55 lbs) (includes carton)
Storage Temperature	-40 to +85 C (-40 to 185 F)
Operating Temperature	0 to 60 C (32 to 40 F)
Operating Humidity	5 to 95% at 60 C (non-condensing)
Shock Non -operating Operating	 50g 30g
Operating Vibration	2g at 10 to 500Hz (Agrees with 1756 I/O module specification)
Maximum Operating Voltage	30 Vdc
Max. Module Operating Current Per Point: Per Module:	 2 Amps 12 Amps NOTICE Refer to the Wiring Diagram(s) for current limits for a specific configura-
Agency Certifications	UL Classified: Under UL File Number E113724 CSA CE : compliant for all applicable directives
Pollution Degree	2
Environmental Rating	IP20

Conversion: 1771-OFE1 to 1756 -OF8I (Voltage)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① Cables are available in lengths of 0.5M or 1.0M (005=0.5M, 010=1.0M)

② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF8I [1492-CONACAB005E8V] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

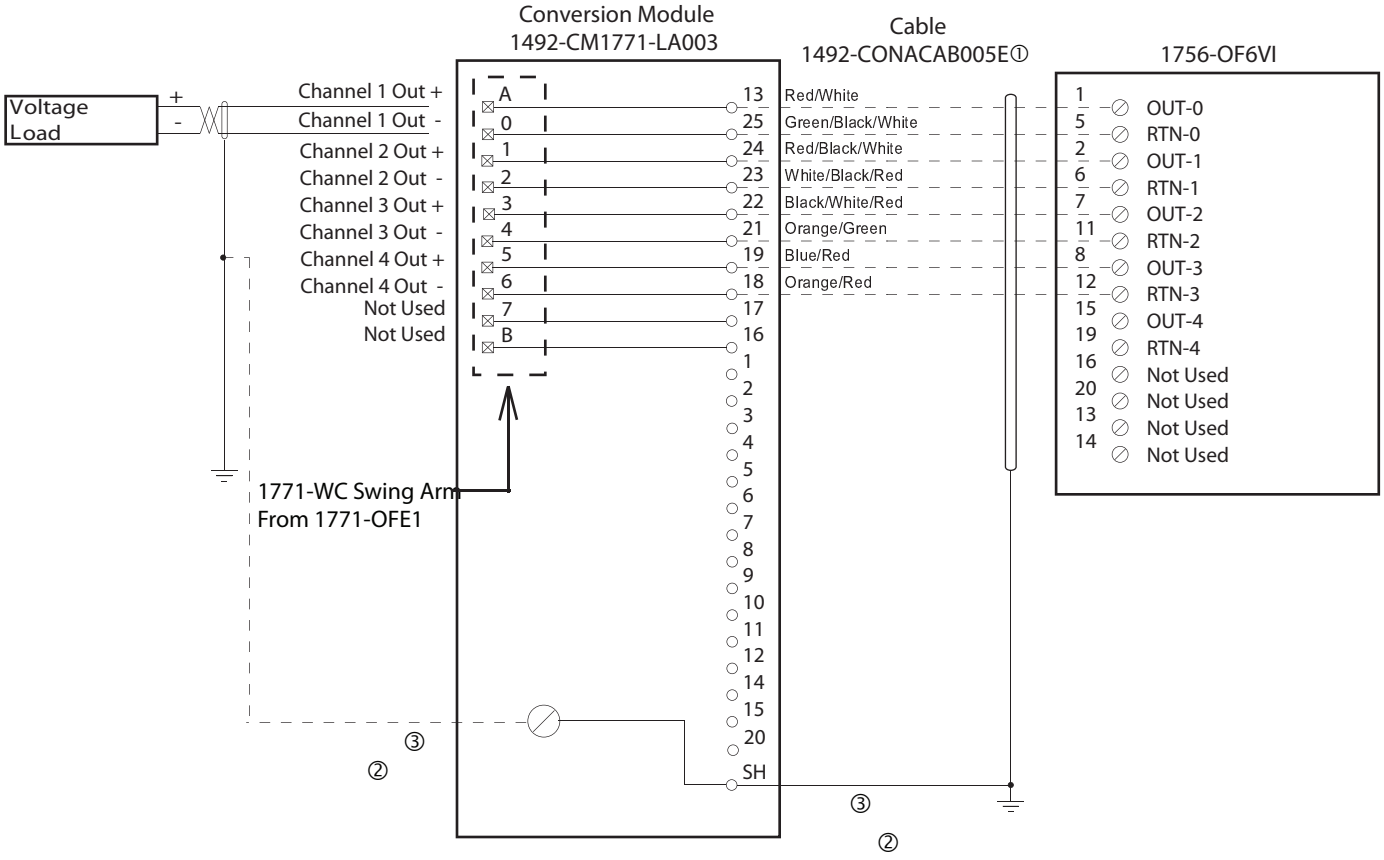
③ The 1771-OFE1 analog output range was configured by jumpers, the output range for the 1756-OF8I is software configured. Please ensure the correct output range is configured in the 1756-OF8I.

④ Refer to your 1771-OFE1 and 1756-OF8I Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details.

[Reference Doc: 10002306852]

Conversion: 1771-OFE1 to 1756 -OF6VI (Voltage)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① Cables are available in lengths of 0.5M or 1.0M (005=0.5M, 010=1.0M)

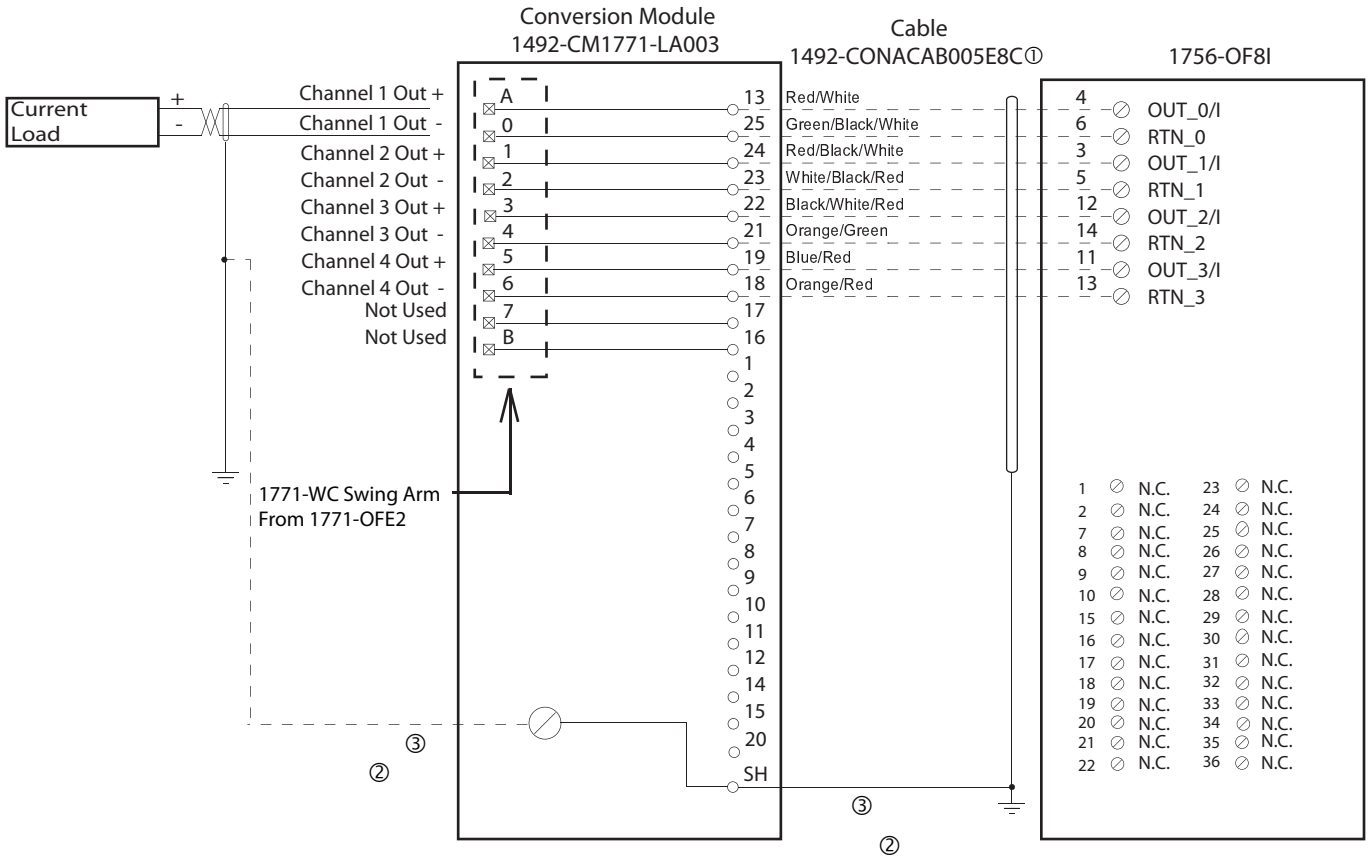
② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF6VI [1492-CONACAB005E] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

③ The 1771-OFE1 analog output range was configured by jumpers, the output range for the 1756-OF6VI is software configured. Please ensure the correct output range is configured in the 1756-OF6VI.

④ Refer to your 1771-OFE1 and 1756-OF6VI Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details. [Reference Doc: 41170-949]

Conversion: 1771-OFE2 to 1756 -OF8I (Current)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① Cables are available in lengths of 0.5M or 1.0M (005=0.5M, 010=1.0M)

② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF8I [1492-CONACAB005E8C] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

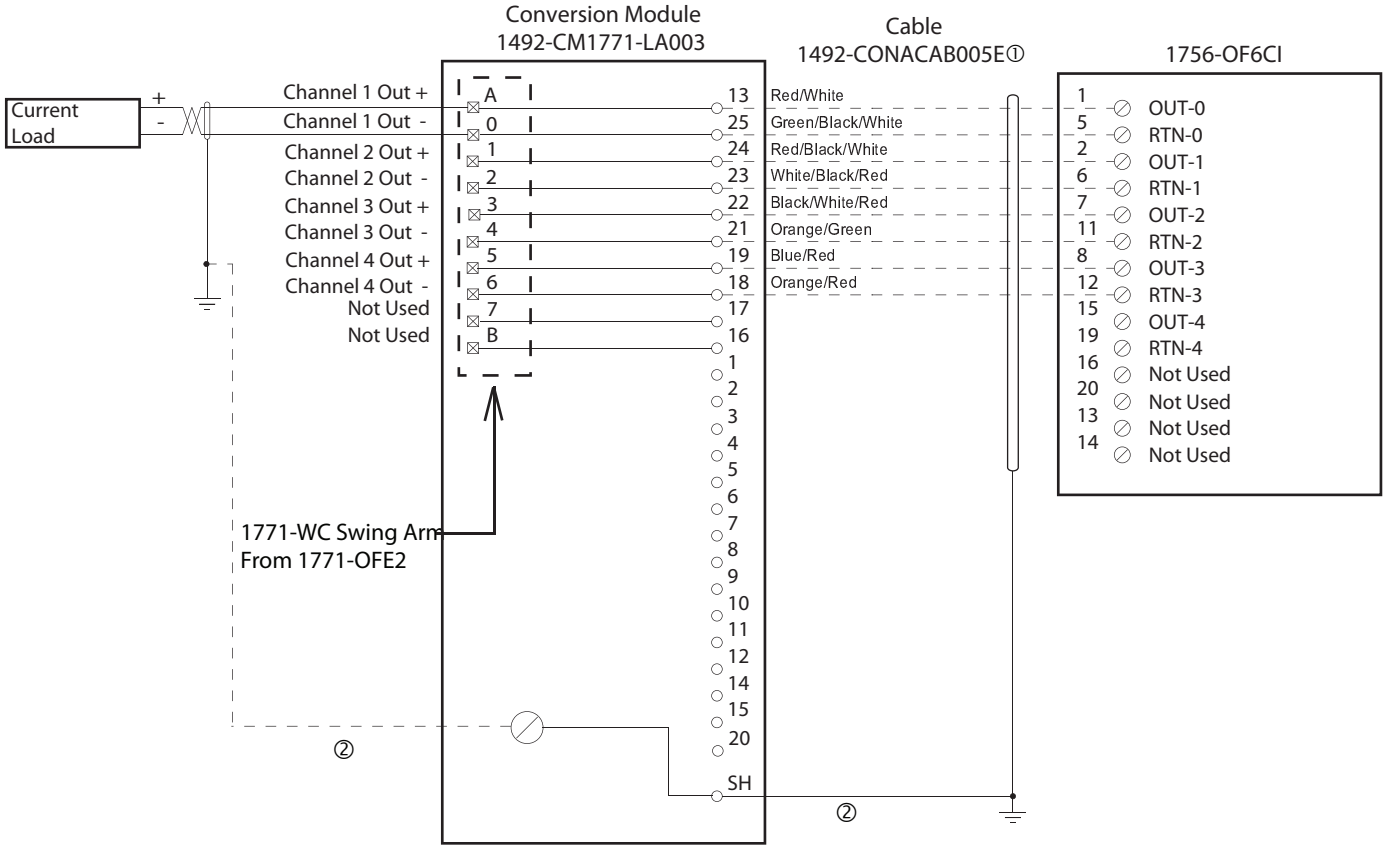
③ The 1771-OFE1 analog output range was configured by jumpers, the output range for the 1756-OF8I is software configured. Please ensure the correct output range is configured in the 1756-OF8I.

④ Refer to your 1771-OFE1 and 1756-OF8I Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details.

[Reference Doc: 10002306853]

Conversion: 1771-OFE2 to 1756-OF6CI (Current)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① Cables are available in lengths of 0.5M or 1.0M (005=0.5M, 010=1.0M)

② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF6CI [1492-CONACAB005E] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

③ IMPORTANT: The 1771-OFE2 module required the use of an external power supply to drive the analog device. The 1756-OF6CI analog output provides the drive power to the analog device. ENSURE the external power supply is REMOVED from the current loop before applying power to the 1756-OF6CI module or the analog output module may be damaged.

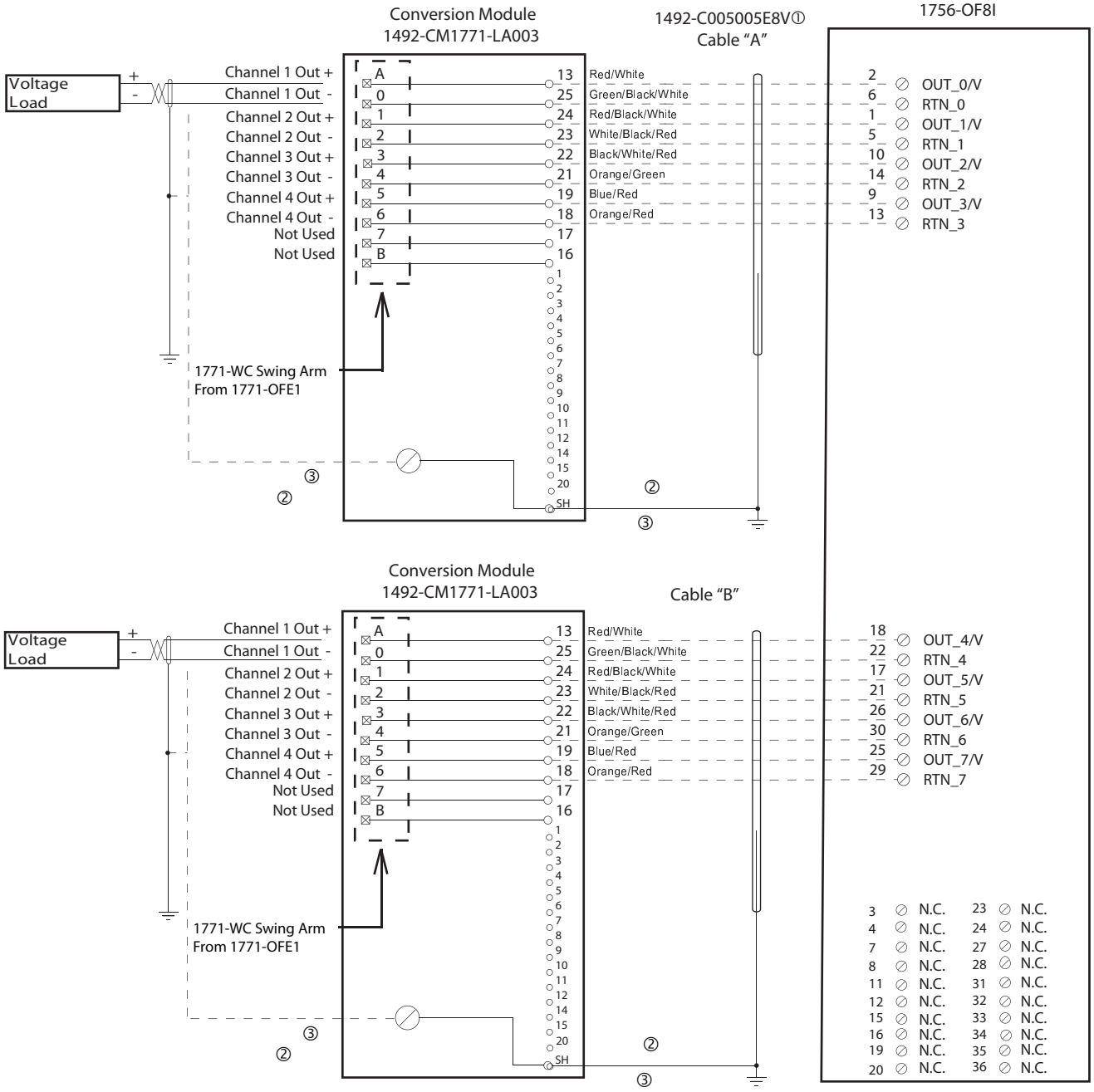
④ The 1771-OFE2 analog output ranges were factory set, the output range for the 1756-OF6CI is software configured. Please ensure the correct output range is configured in the 1756-OF6CI.

⑤ The 1756-OF6CI module can drive a load up to 550 ohms with the standard pre-configured cable [1492-CONACAB005E]. If greater than a 550 ohm drive current is required, the pre-wired cable can be modified at the 1756-OF6CI terminal block to drive up to a 1000 ohms. Refer to the 1756-OF6CI Installation Manual for modification details.

⑥ Refer to your 1771-OFE2 and 1756-OF6CI Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details. [Reference Doc: 41170-948]

Conversion: (2)1771-OFE1 to 1756 -OF8I (Voltage)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① This Bul. 1492 cable consists of 2 separate cables (cable "A" and cable "B") wired to one 1756-OF8I. Each cable can be either 0.5M or 1.0M (005=0.5M, 010=1.0M). Ensure that cable A and cable B are connected to the correct module in the conversion.

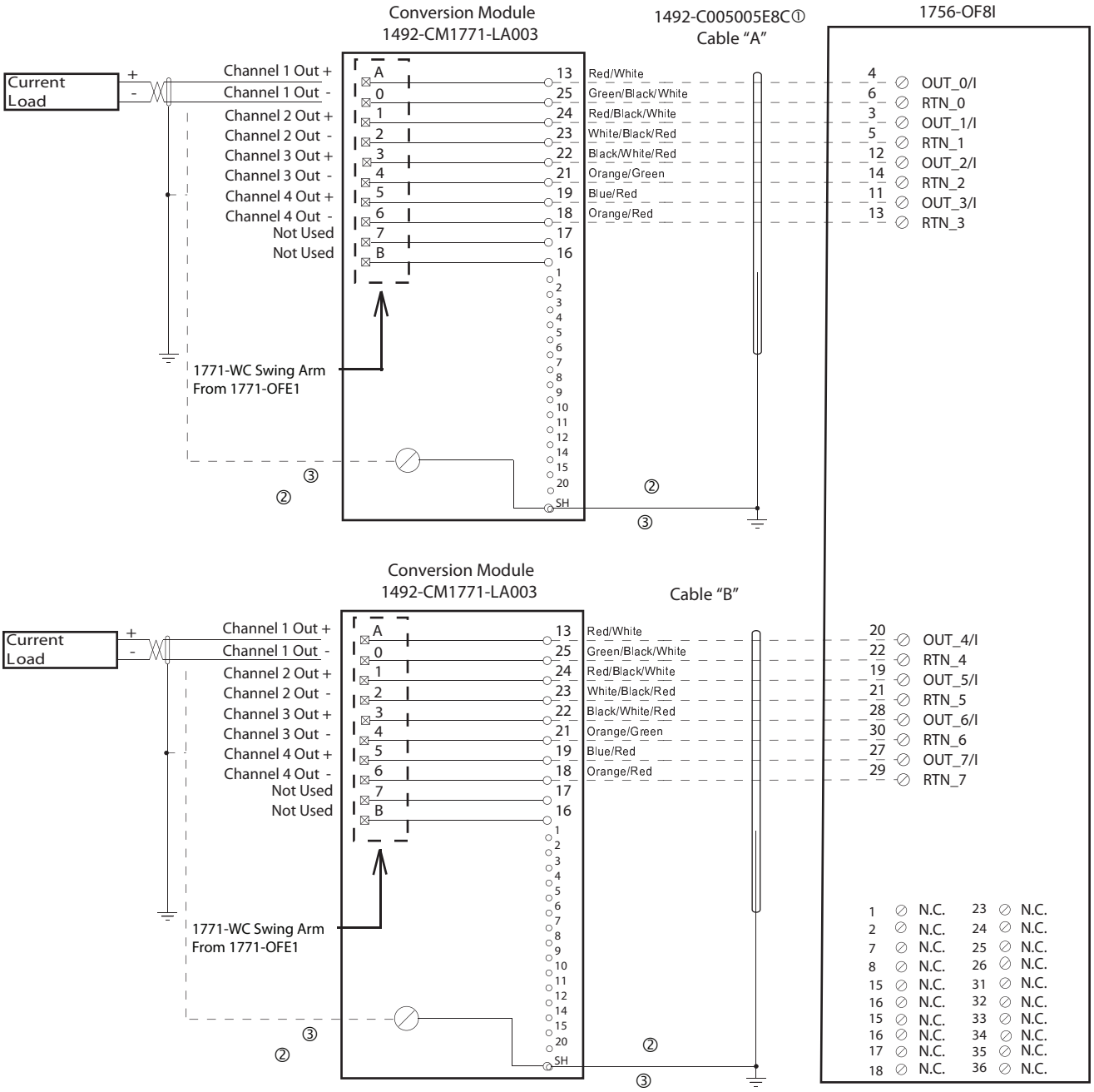
② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF8I [1492-C005005E8V] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

③ The 1771-OFE1 analog output range was configured by jumpers, the output range for the 1756-OF8I is software configured. Please ensure the correct output range is configured in the 1756-OF8I.

④ Refer to your 1771-OFE1 and 1756-OF8I Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details.

Conversion: (2)1771-OFE2 to 1756 -OF8I (Current)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① This Bul. 1492 cable consists of 2 separate cables (cable "A" and cable "B") wired to one 1756-OF8I. Each cable can be either 0.5M or 1.0M (005=0.5M, 010=1.0M). Ensure that cable A and cable B are connected to the correct module in the conversion.

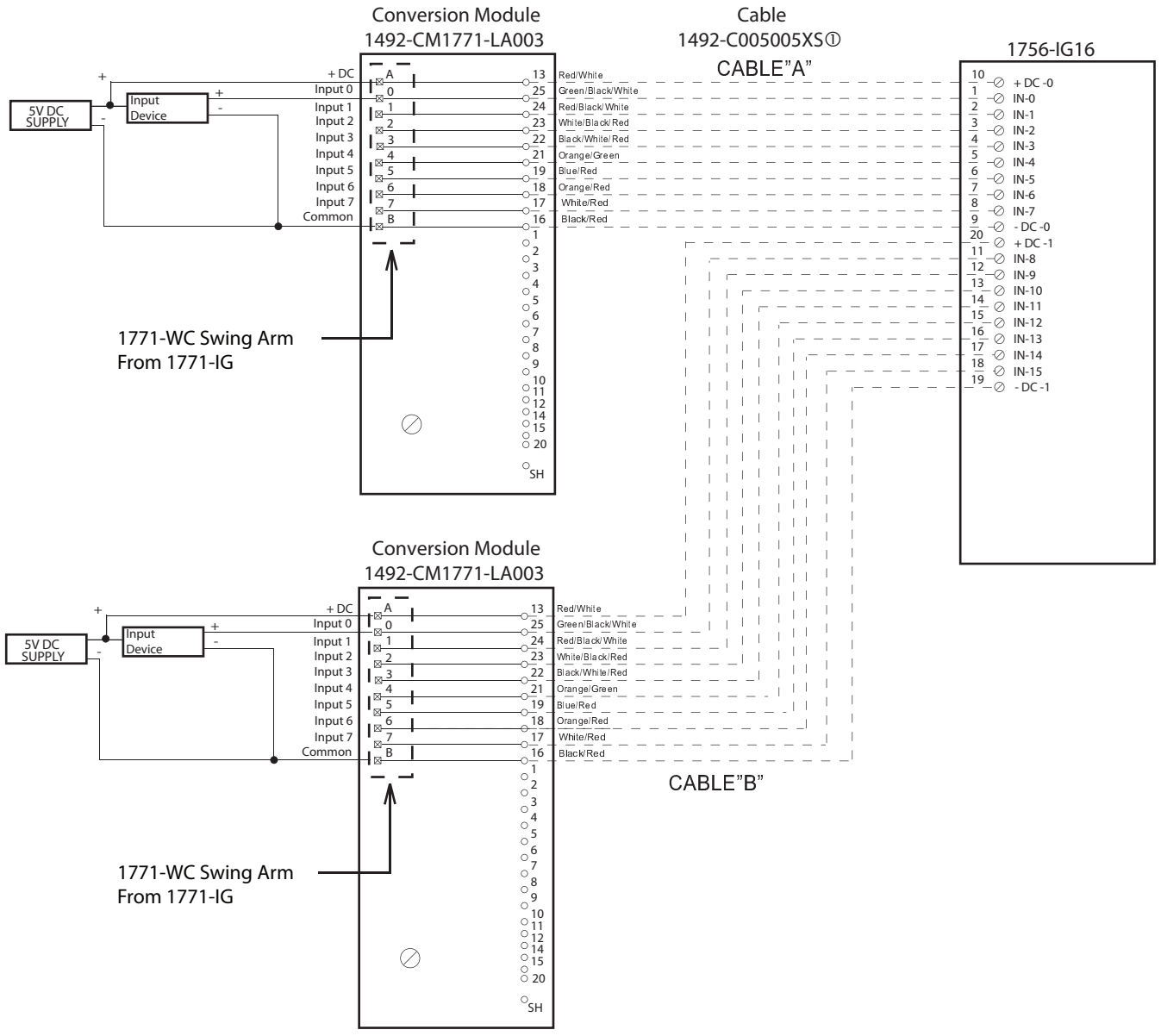
② SHIELD GROUNDING: In some installations, the field wiring shield was grounded on the 1771 chassis. If this was the case, the installer must remove these shield connections from the 1771 chassis and they can be connected to the grounding stud on the 1492-CM1771-LA003 module. The pre-wired cable used between the 1492-CM1771-LA003 module and the 1756-OF8I [1492-C005005E8C] provides a shield ground lug to ground the shield at the 1756 ControlLogix chassis, this must be connected. Do NOT connect this ground lug to the conversion module grounding stud.

③ The 1771-OFE2 analog output range was configured by jumpers, the output range for the 1756-OF8I is software configured. Please ensure the correct output range is configured in the 1756-OF8I.

④ Refer to your 1771-OFE2 and 1756-OF8I Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details.

Conversion: 1771-IG (2) to 1756-IG16 (1)

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① This Bul. 1492 cable consists of 2 separate cables (cable "A" and cable "B") wired to one 1756-IG16 RTB. Each cable can be either 0.5M or 1.0M (005=0.5M, 010=1.0M). Ensure that cable A and cable B are connected to the correct module in the conversion.

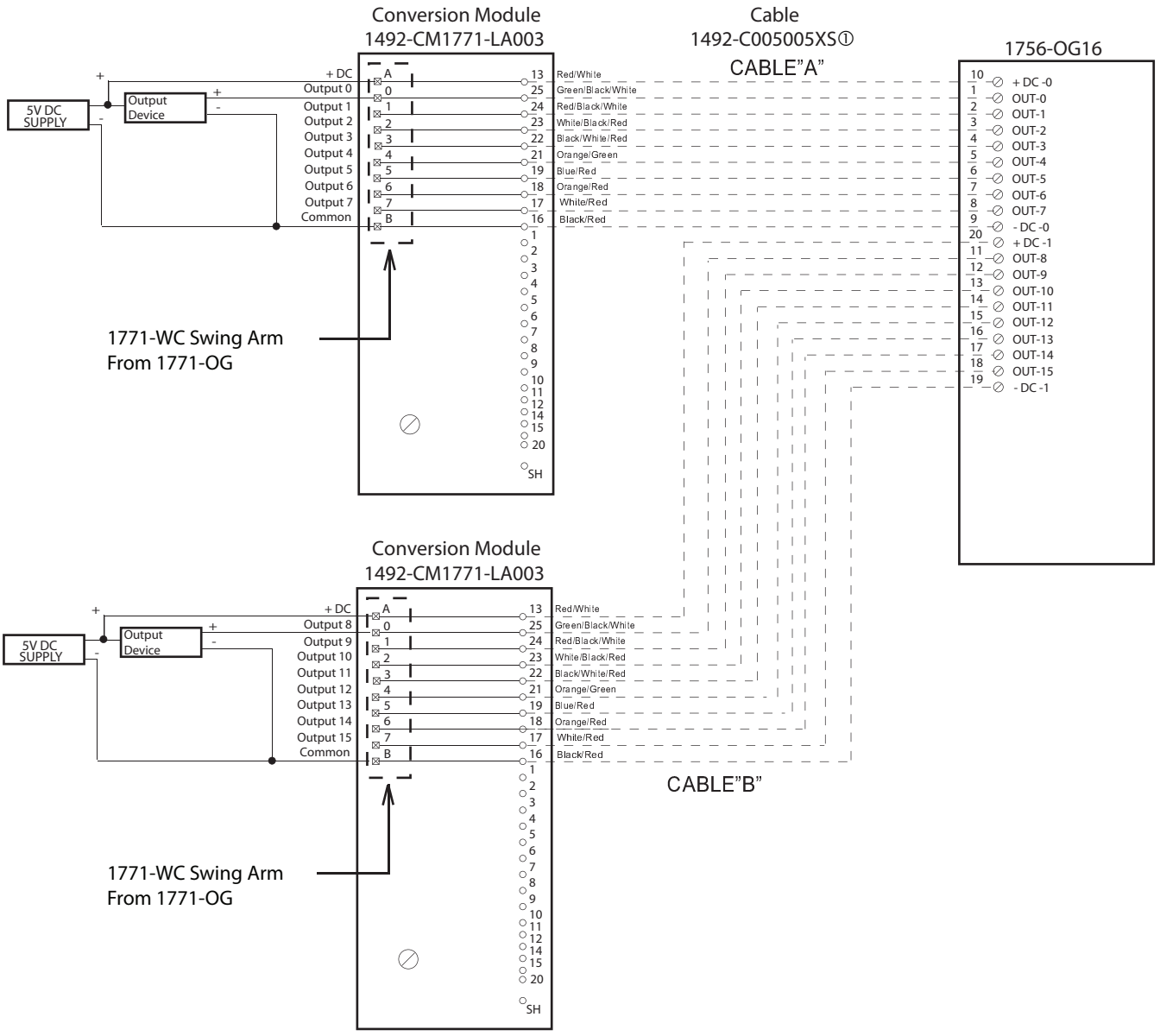
② The input delay times for the 1771-IG module versus the 1756-IG16 module are as follows:

	1771-IG	1756-IG16 w/ 1492-C005005XS
a) Off-to-On Delay	1ms (+/-10ms)	270ms max (plus selectable filter)
b) On-to-Off Delay	1ms (+/-10ms)	390ms max (plus selectable filter)

③ The 1771-IG module is rated 5V DC TTL INPUT MODULE. The 1756-IG16 module is rated 5V DC TTL INPUT MODULE only.

④ Refer to your 1771-IG and 1756-IG16 Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details. [Reference Doc: 41171-027]

WARNING There are several key application considerations and system specifications (bottom of drawing) when using these components (conversion module, cable and input module). Read and understand these considerations before installation.



Conversion Module Installation and Application Considerations

① This Bul. 1492 cable consists of 2 separate cables (cable "A" and cable "B") wired to one 1756-OG16 RTB. Each cable can be either 0.5M or 1.0M (005=0.5M, 010=1.0M). Ensure that cable A and cable B are connected to the correct module in the conversion.

② The input delay times for the 1771-OG module versus the 1756-OG16 module are as follows:

	1771-OG	1756-OG16 w/ 1492-C005005XS
a) Off-to-On Delay	1ms (+/-10ms)	45ms max (plus selectable filter)
b) On-to-Off Delay	1ms (+/-10ms)	145ms max (plus selectable filter)

③ The 1771-OG module is rated 5V DC TTL INPUT MODULE. The 1756-OG16 module is rated 5V DC TTL INPUT MODULE only.

④ Refer to your 1771-OG and 1756-OG16 Installation and User Manuals for additional information concerning comparisons of module wiring, features and configuration details. [Reference Doc: 41171-028]

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