SPECTRUM CONTROLS
An Allient Company

1756sc-Series Technical Note Pre-Wired Cable and IFM Options

Document No: 0100346-01 Rev. A0

1756sc Series Pre-Wired Cable and IFM Options

Date: 10/21/08 Product(s):

1756sc-IF8H, 1756sc-OF8H, 1756sc-IF8U, 1756sc-CTR8

Product Revision: NA Information:

AIFM options Document # TN102108-01

The selection table below (Table 1) lists available Allen-Bradley pre-wired cables and AIFM modules that best fit our Spectrum 1756 analog modules. For details on the Allen-Bradley 1492 pre-wired systems, please refer to the AB publication titled “Digital/Analog Programmable Controller Wiring Systems”, (Publication 1492-TD008C-EN-P).

Table 1. Available and Compatible Allen-Bradley Pre-Wired Cable and AIFM Modules

1756sc-IF8H	8-channel analog input module with HART protocol	1492-AIFM8-3[1]	1492-ACABLE-UC (Diff. Voltage) or 1492-ACABLE-UD (Diff. Current)
1756sc-OF8H	8-channel analog output module with HART protocol	1492-AIFM8-3 1	1492-ACABLE-WA (Voltage) or 1492-ACABLE-WB (Current)
1756sc-IF8U	Universal 8-channel analog input module	1492-IFM-40F	1492-ACABLE--*XXX*sc[2]
1756sc-CTR8	8-channel high speed counter module	Not Available	Not Available

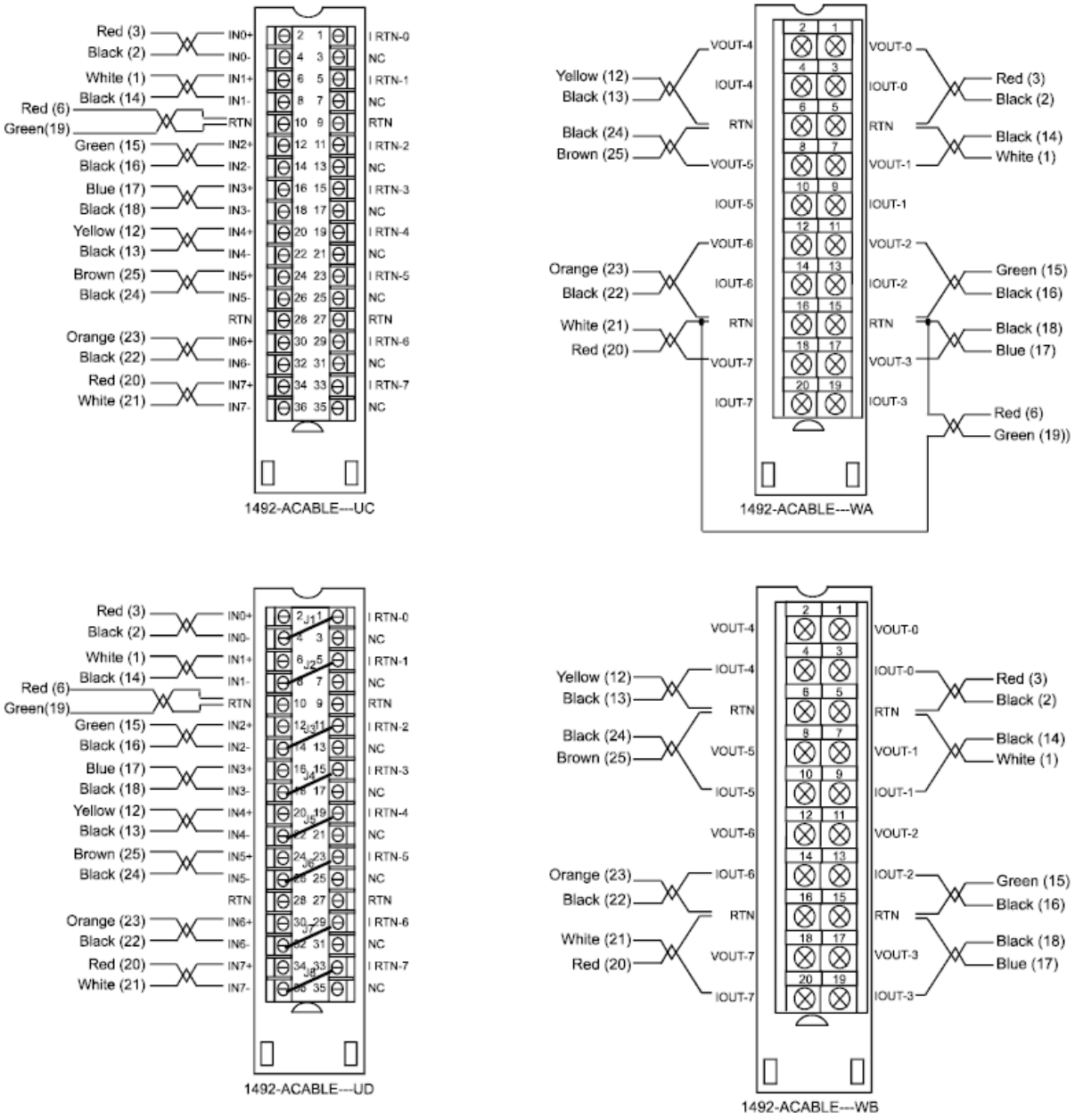
The wiring diagrams below describe the correct wiring for the Spectrum analog modules.

[1] You may substitute one of three fused AIFM blocks (i.e. 1492-AIFM8-F-5, 1492-AIFM16-F-3, 1492-AIFM16-F-5)

[2] Where XXX is the length (010, 020, 030,050,070) 1,2,3,5 or 7 meter lengths respectively.

Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA
Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

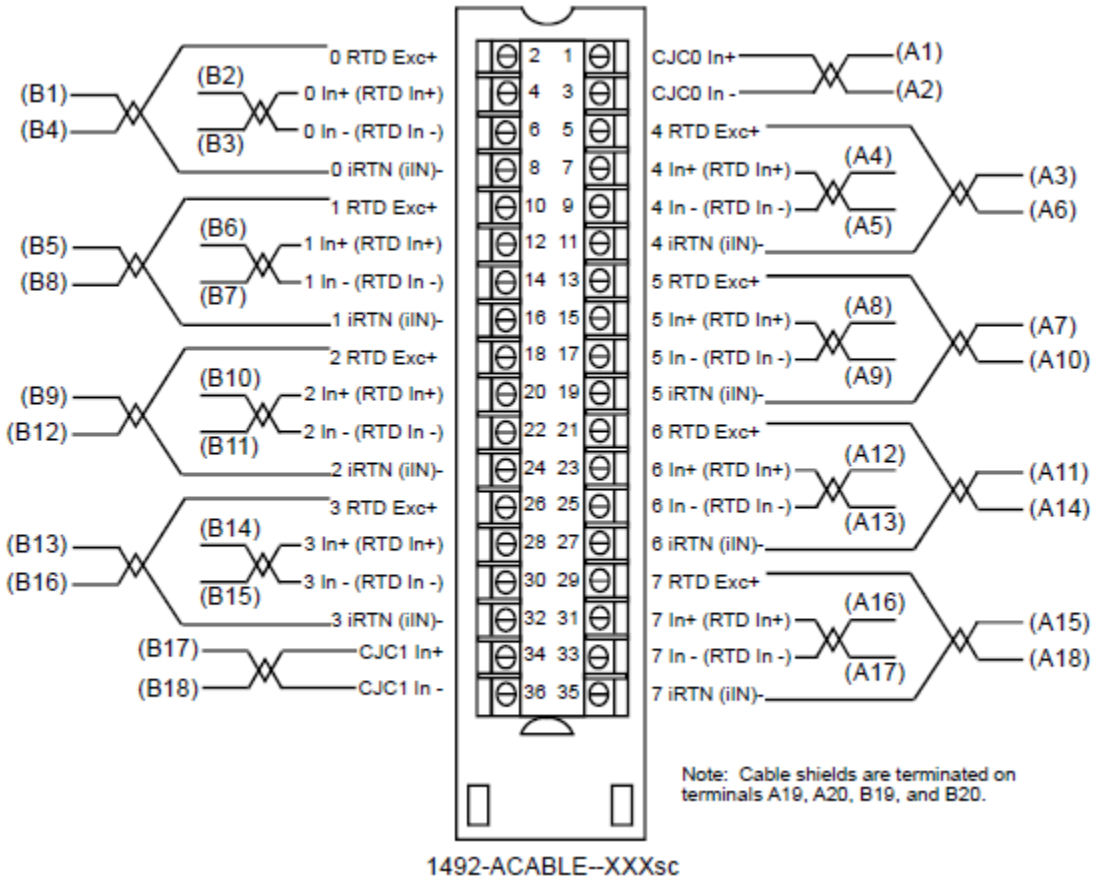
Figure 1. Wiring for 1756 Modules



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 1., contd. Wiring for 1756 Modules



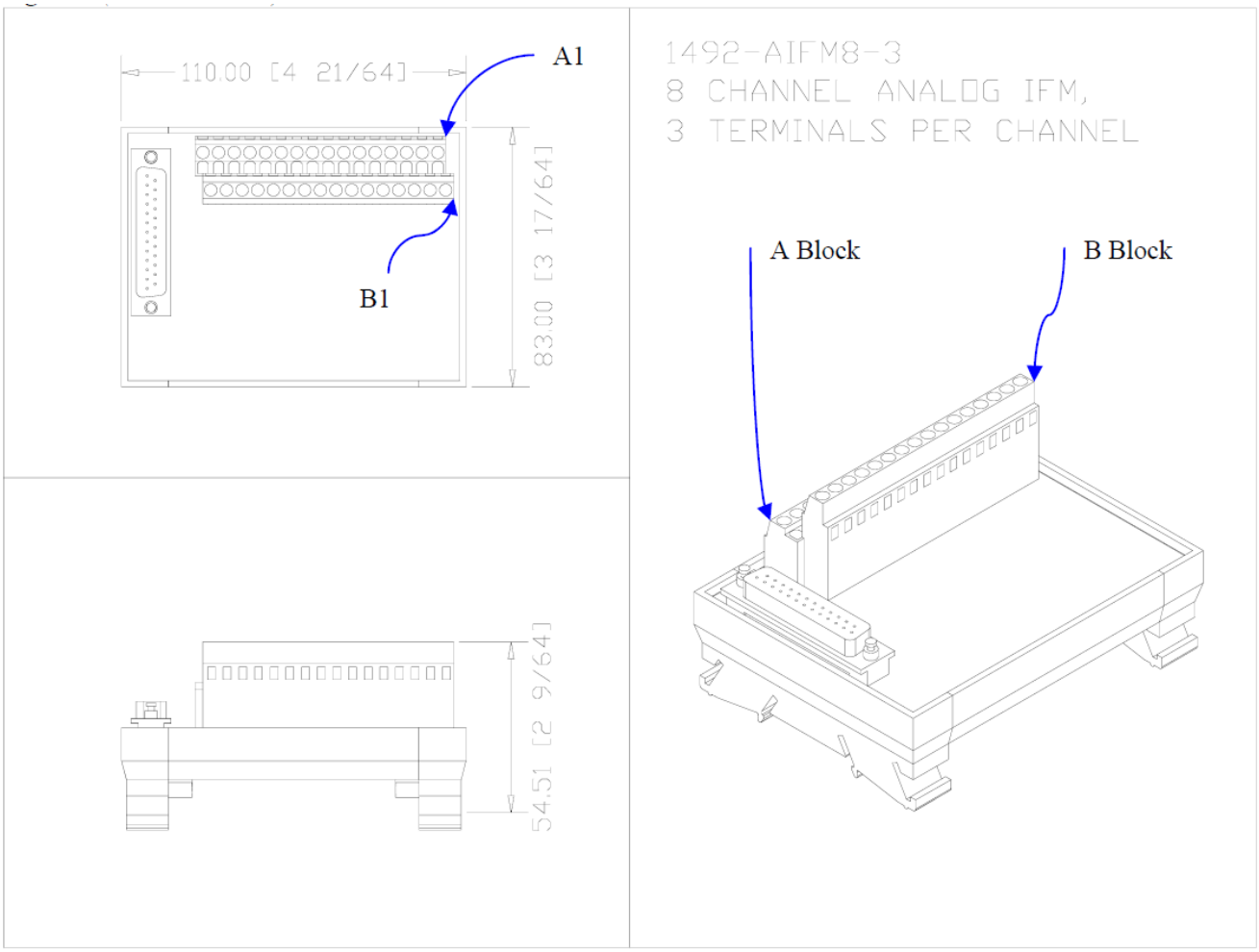
NOTE	The numbers listed above in parenthesis refer to the ACABLE pin number. Use these numbers to determine the appropriate AIFM terminal numbers in figures 7 and 8.

NOTE	The IF8H and OF8H use the same cable and IFM module as the Allen-Bradley IF16 and OF8 respectively.

Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

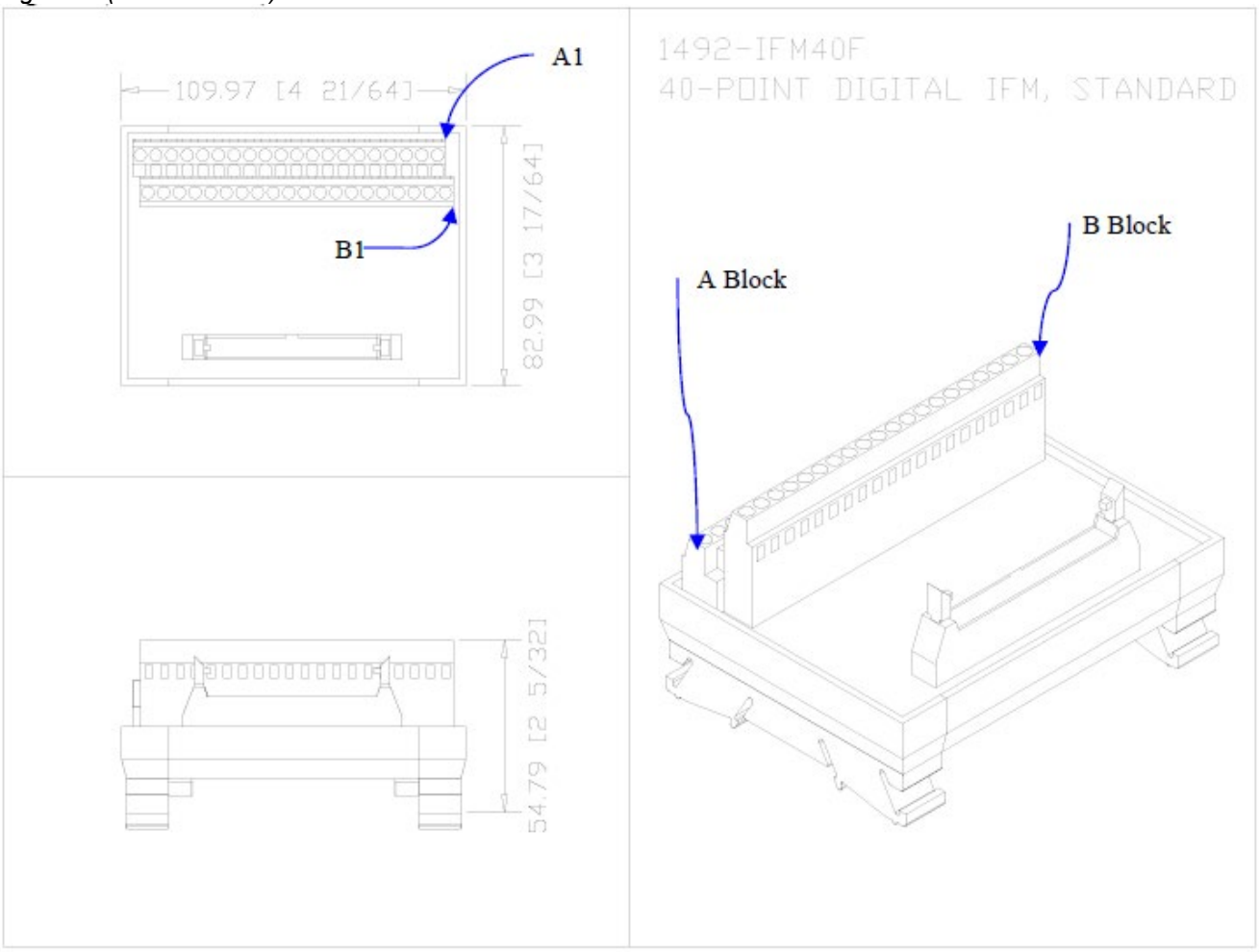
Figure 2. 1492-AIFM8-3



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

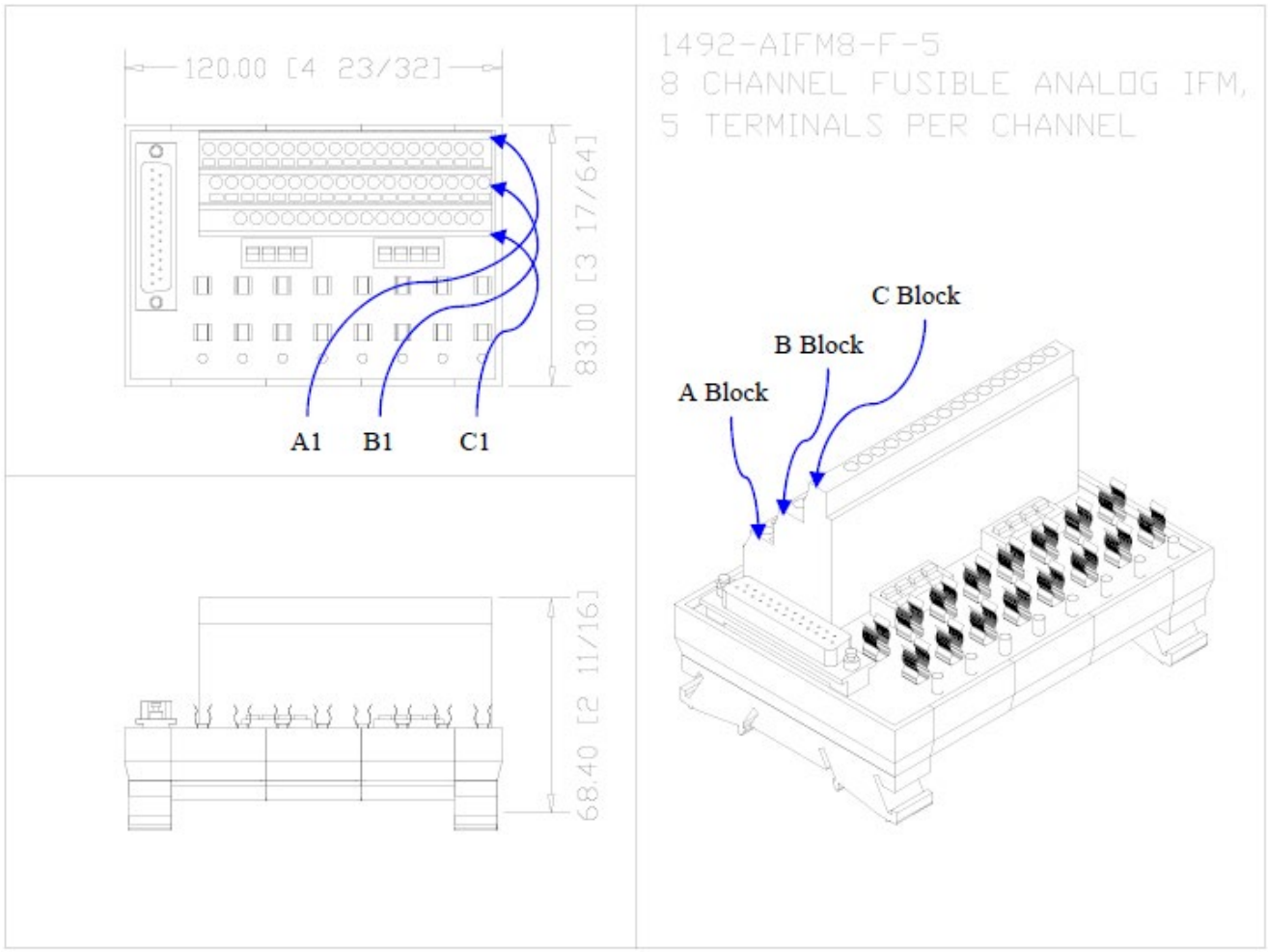
Figure 3. (1492-IFM40F)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

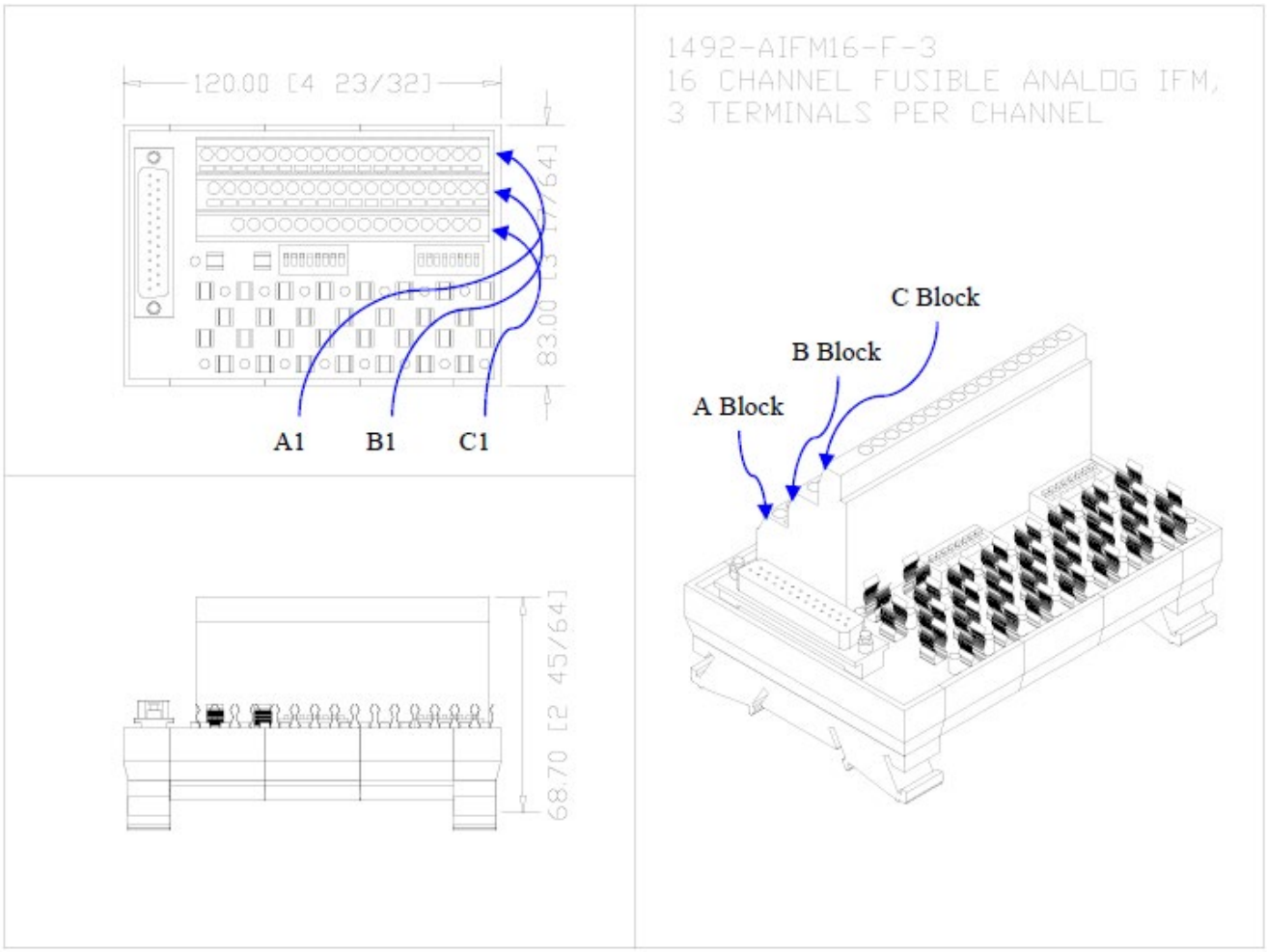
Figure 4. (1492-AIFM8-F-5)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

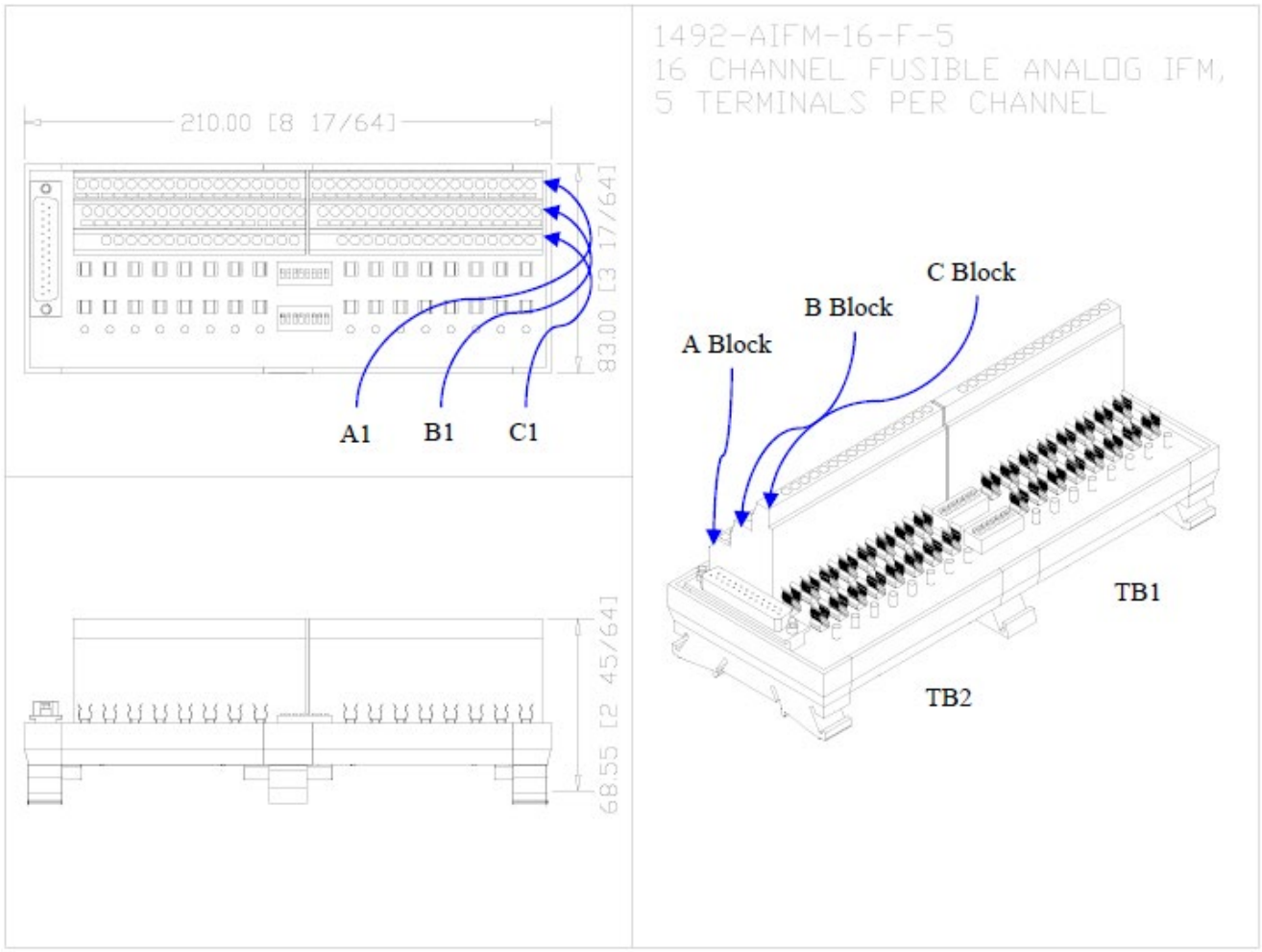
Figure 5. (1492-AIFM16-F-3)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 6. (1492-AIFM-16-F-5)

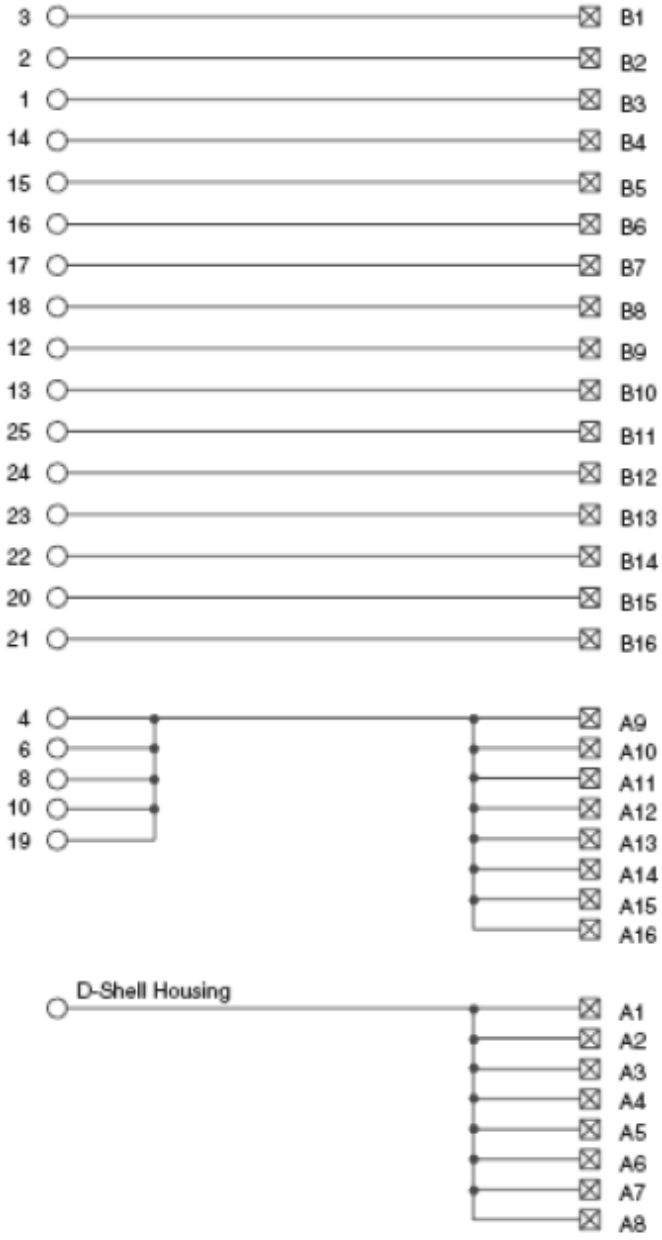


Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

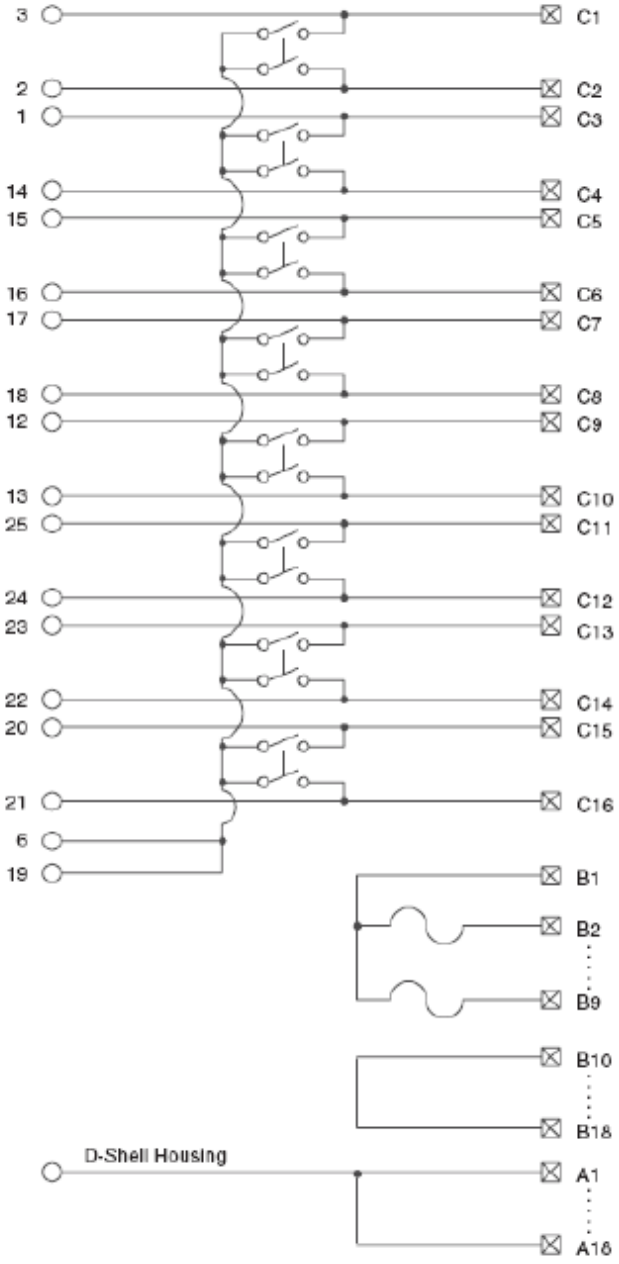
Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 7. (AIFM Pinouts)

1492-AIFM8-3 (Pinout)



1492-AIFM8-F-5 (Pinout)

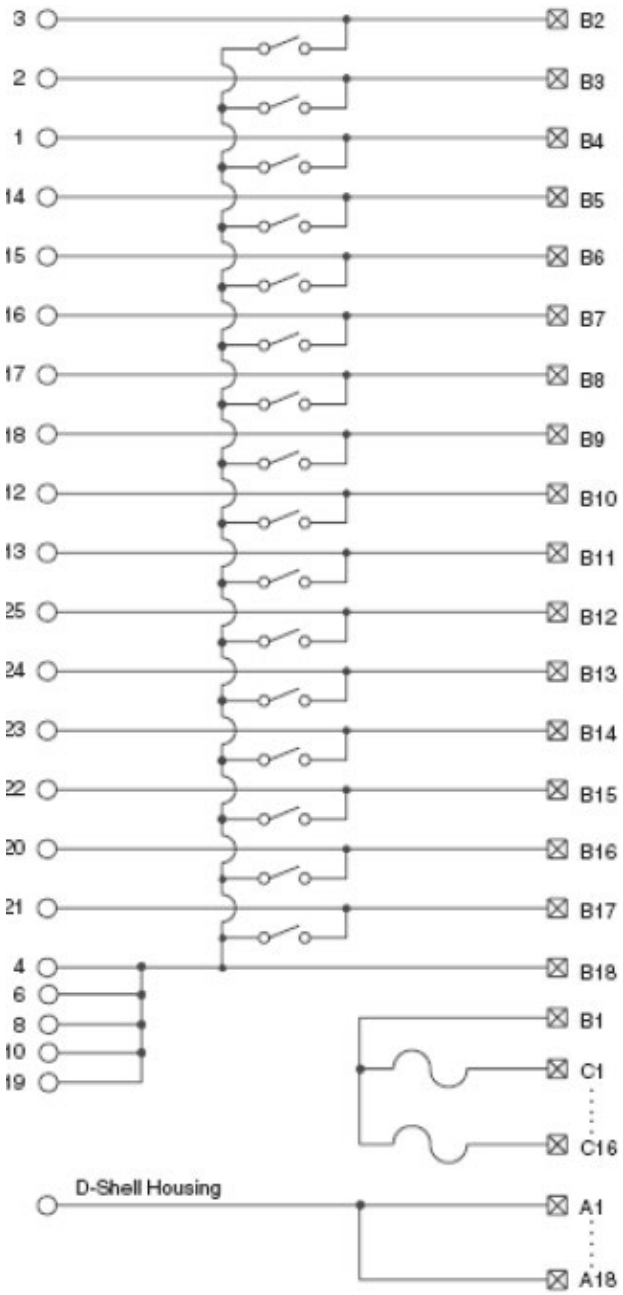


Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

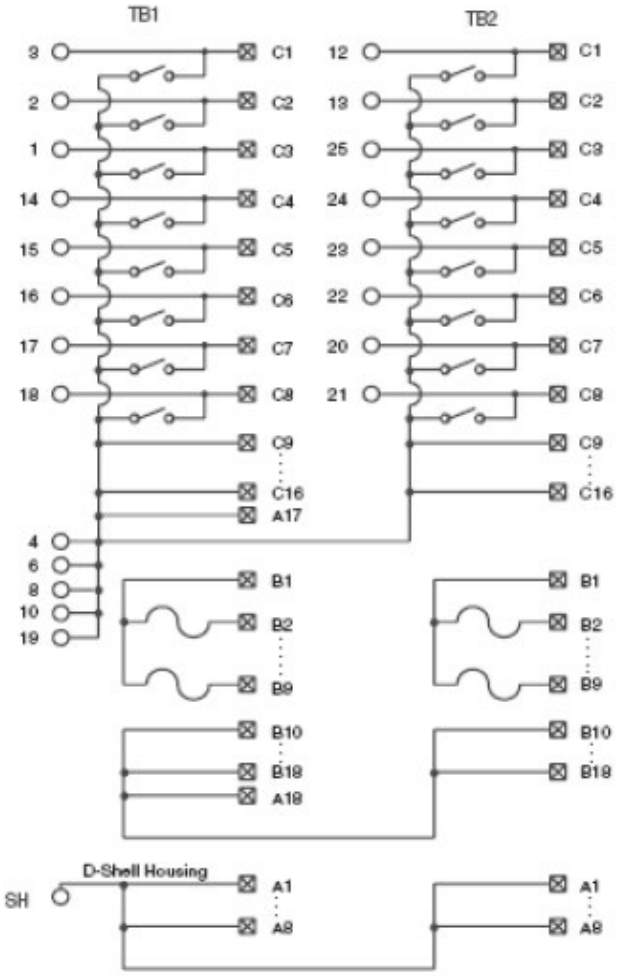
Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 8. (AIFM Pinouts, contd.)

1492-AIFM16-F-3 (Pinout)



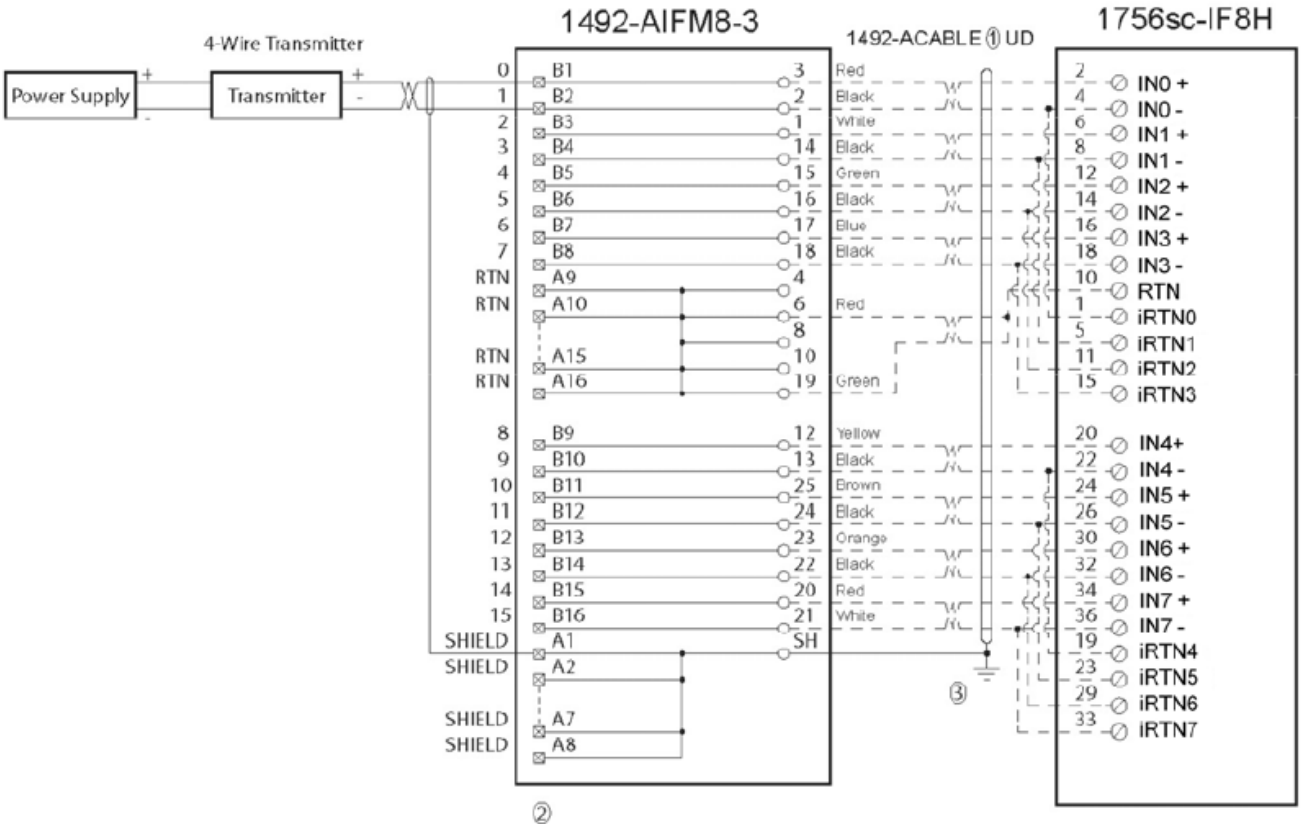
1492-AIFM16-F-5 (Pinout)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 9. 1756sc-IF8H (8 Differential Current) with 1492-AIFM8-3)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

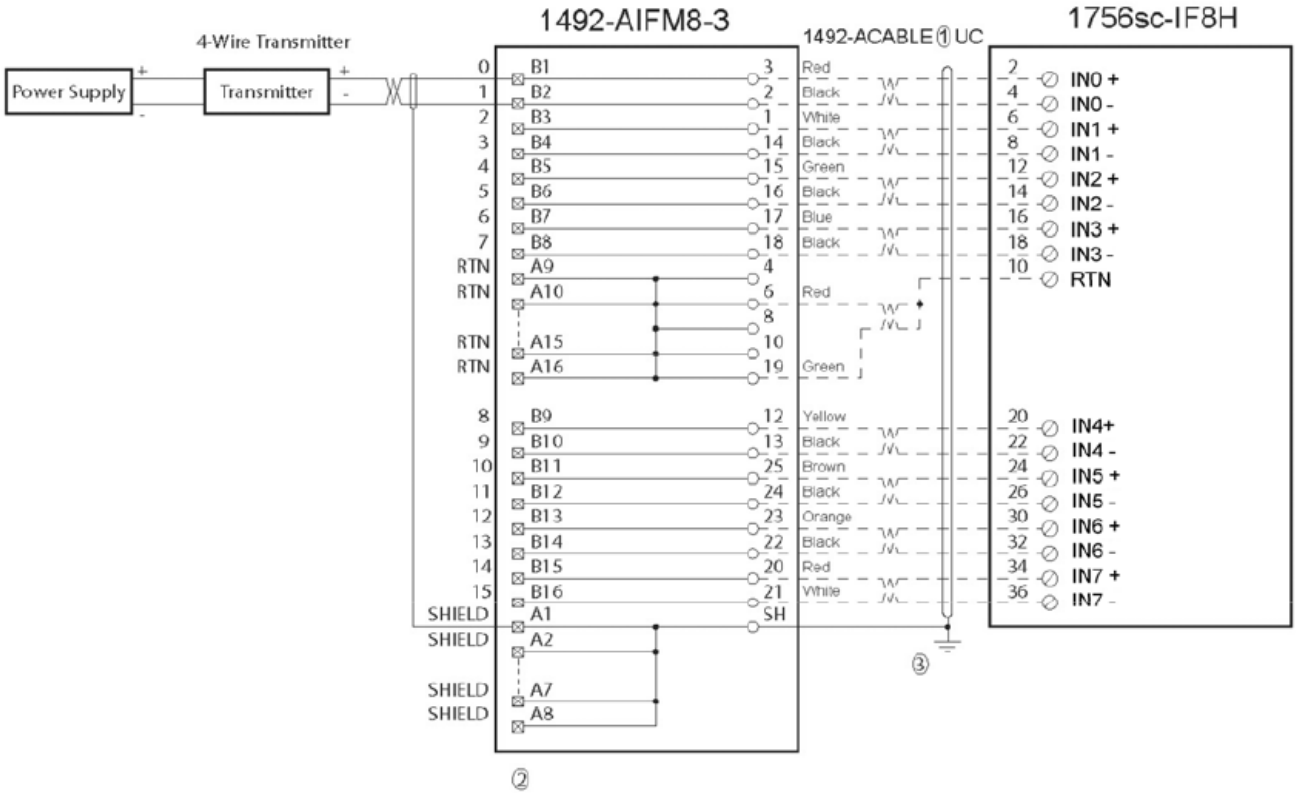
② Terminals starting with A are the lower row of terminals, B terminals are the upper row.

③ Follow your PLC Analog User Manual for proper shield grounding instructions.

Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 10. 1756sc-IF8H (8 Differential Current) with 1492-AIFM8-3, contd.)

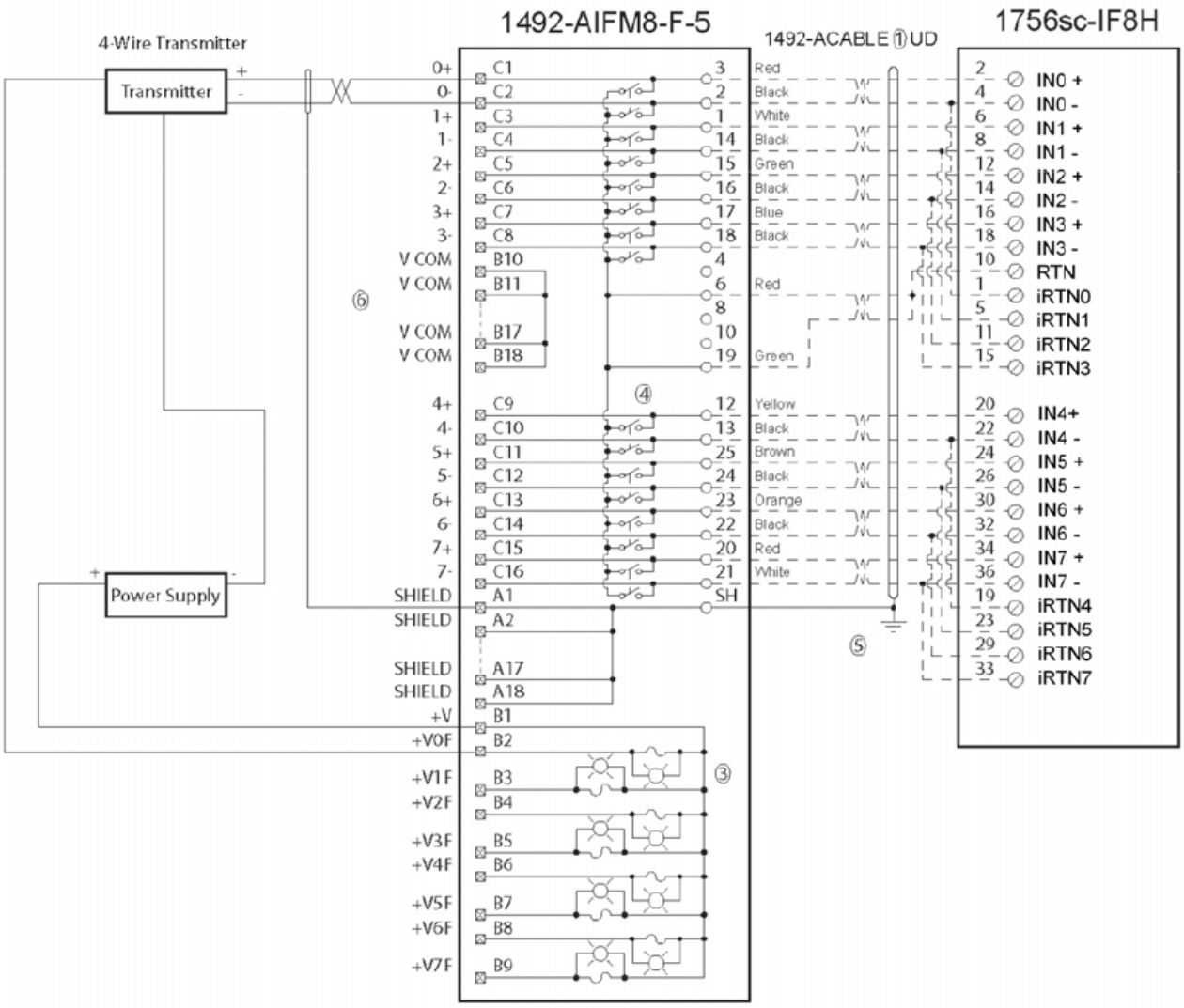


① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② Terminals starting with A are the lower row of terminals, B terminals are the upper row.

③ Follow your PLC Analog User Manual for proper shield grounding instructions.

Figure 11. 1756sc-IF8H (8 Differential Current) with 1492-AIFM8-F-5, contd.)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② Terminals starting with A are the lower row of terminals, B terminals are the middle row, C terminals are the upper row.

③ LED provides blown fuse indication. When the fuse is blown the leakage current through the LED is 2mA nominal. One analog power source must be used with this module combination as the fuses are commoned on the AIFM.

④ Function of DIP switch is required by some PLC Analog Modules to short out unused analog channels to common when closed.
Factory Position: Open.
(refer to your PLC manual for details.)

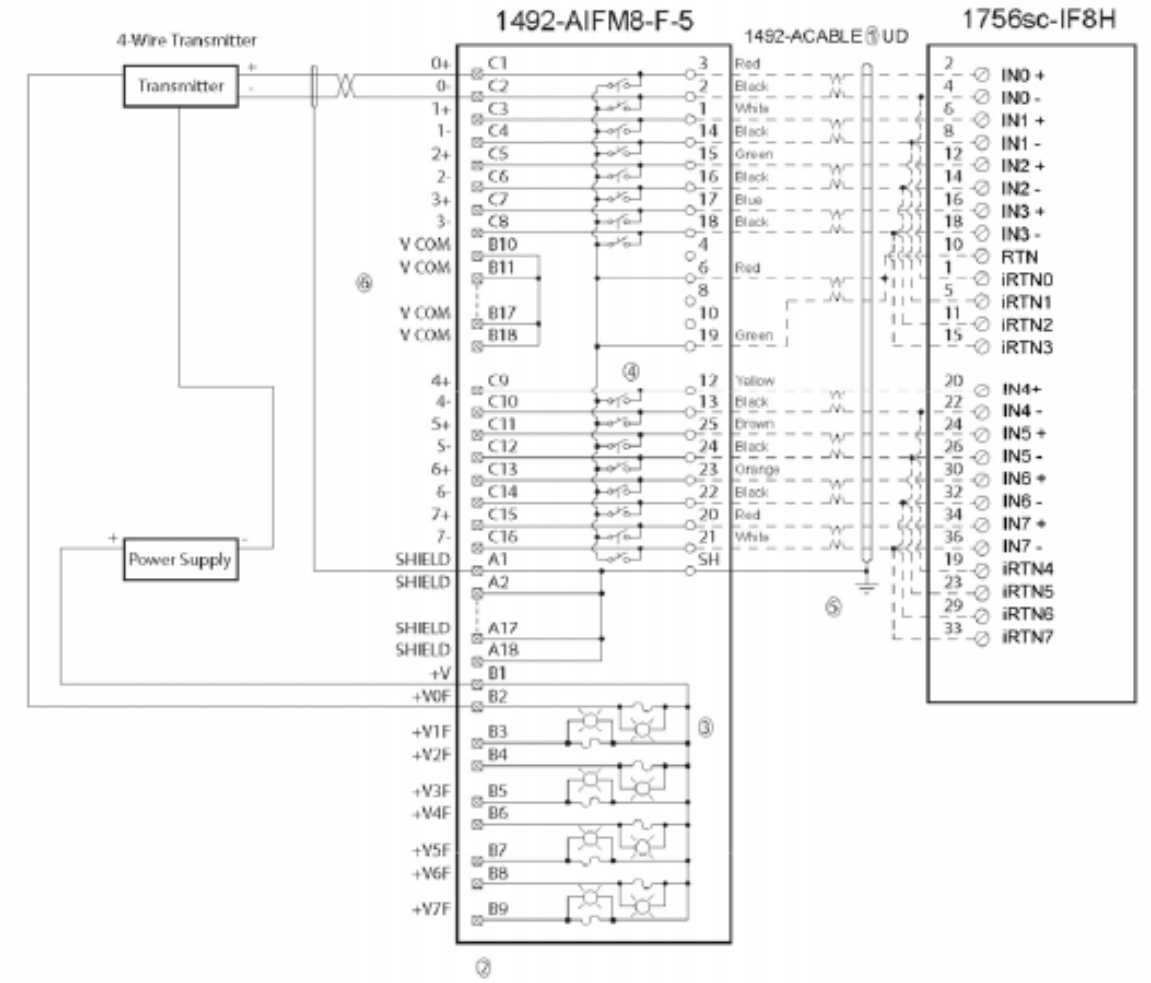
⑤ Follow your PLC Analog User Manual for proper shield grounding instructions.

⑥ Terminals B10 through B18 can be used for field wire convenience connections. NOTE: they are connected together (commoned) on the AIFM.

Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 12. 1756sc-IF8H (8 Differential Voltage) with 1492-AIFM8-F-5, contd.)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② Terminals starting with A are the lower row of terminals, B terminals are the middle row, C terminals are the upper row.

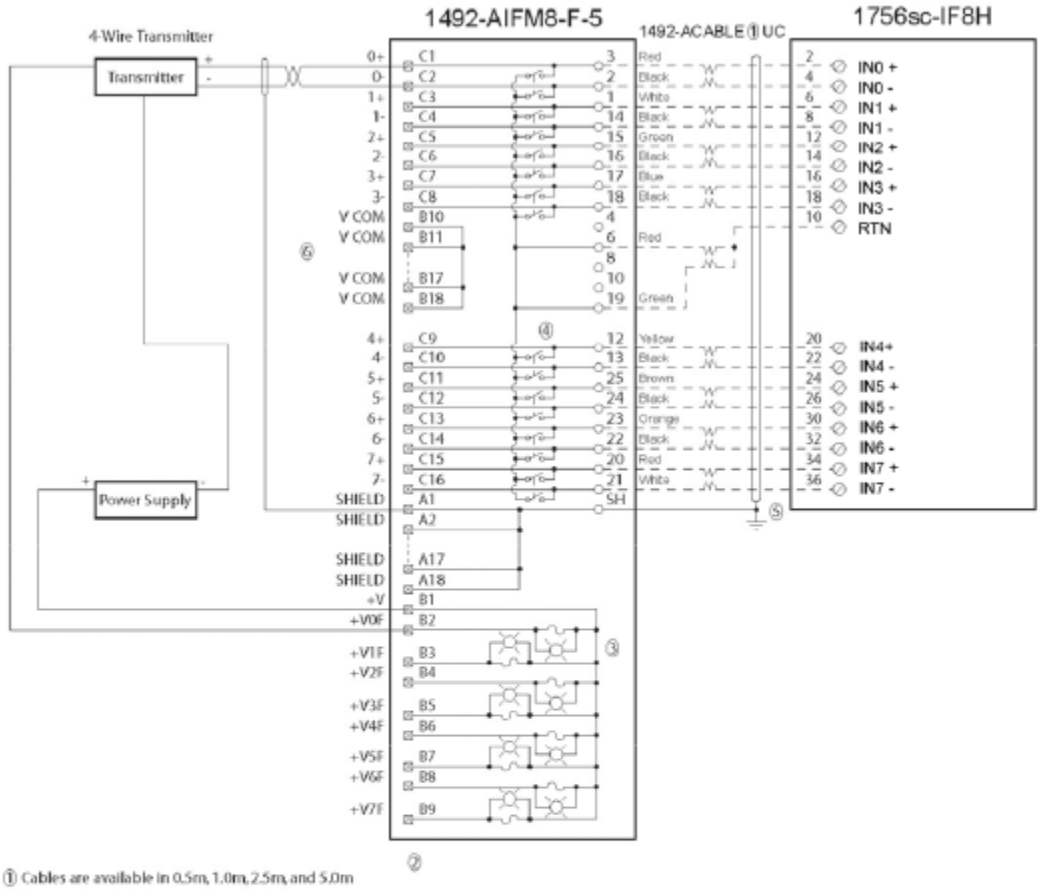
③ LED provides blown fuse indication. When the fuse is blown the leakage current through the LED is 2mA nominal. One analog power source must be used with this module combination as the fuses are commoned on the AIFM.

④ Function of DIP switch is required by some PLC Analog Modules to short out unused analog channels to common when closed.
Factory Position: Open.
(refer to your PLC manual for details.)

⑤ Follow your PLC Analog User Manual for proper shield grounding instructions.

⑥ Terminals B10 through B18 can be used for field wire convenience connections. NOTE: they are connected together (commoned) on the AIFM.

Figure 13. 1756sc-IF8H (8 Differential Voltage) with 1492-AIFM8-F-5, contd.)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② Terminals starting with A are the lower row of terminals, B terminals are the middle row, C terminals are the upper row.

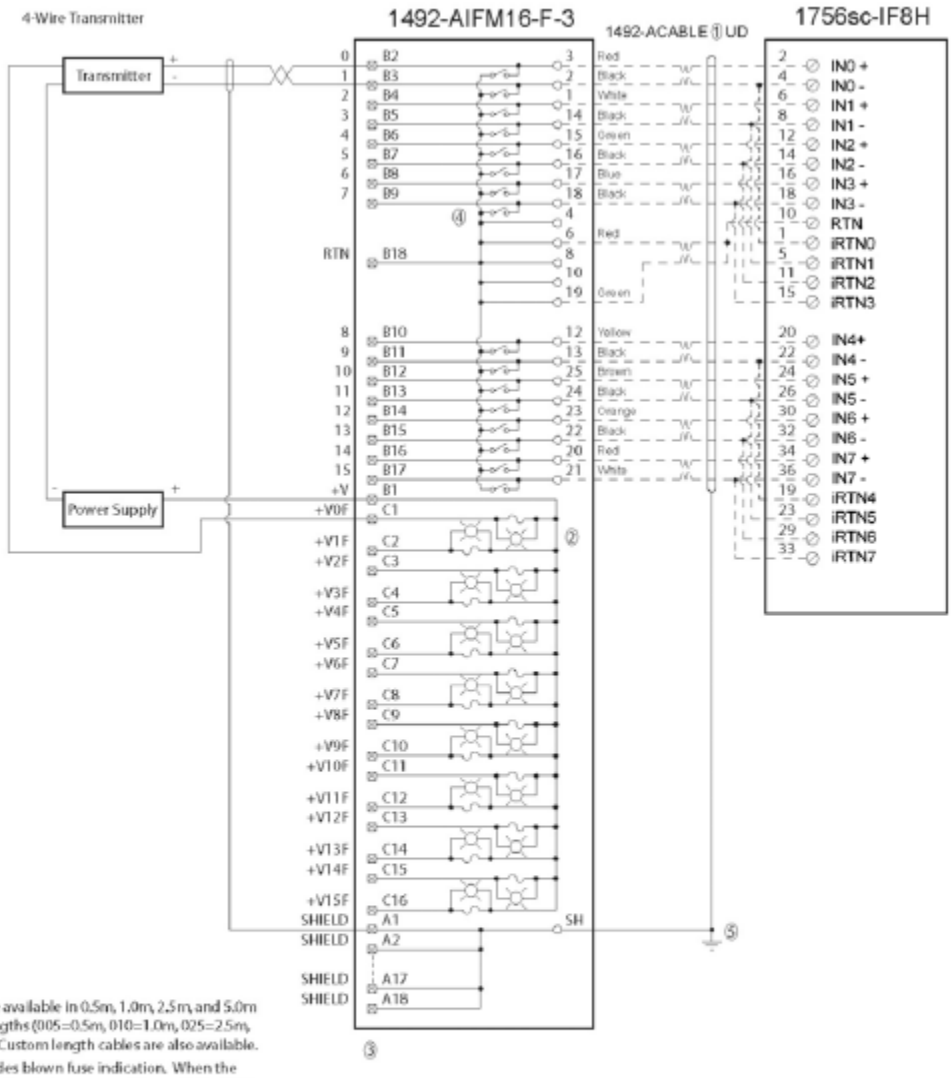
③ LED provides blown fuse indication. When the fuse is blown the leakage current through the LED is 2mA nominal. One analog power source must be used with this module combination as the fuses are commoned on the AIFM.

④ Function of DIP switch is required by some PLC Analog Modules to short out unused analog channels to common when closed.
Factory Position: Open.
(refer to your PLC manual for details)

⑤ Follow your PLC Analog User Manual for proper shield grounding instructions.

⑥ Terminals B10 through B18 can be used for field wire convenience connections. NOTE: they are connected together (commoned) on the AIFM.

Figure 14. 1756sc-IF8H (8 Differential Voltage) with 1492-AIFM16-F-3)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② LED provides blown fuse indication. When the fuse is blown the leakage current through the LED is 2mA nominal. One analog power source must be used with this module combination as the fuses are commoned on the AIFM.

③ Terminals starting with A are the lower row of terminals, B terminals are the middle row, C terminals are the upper row.

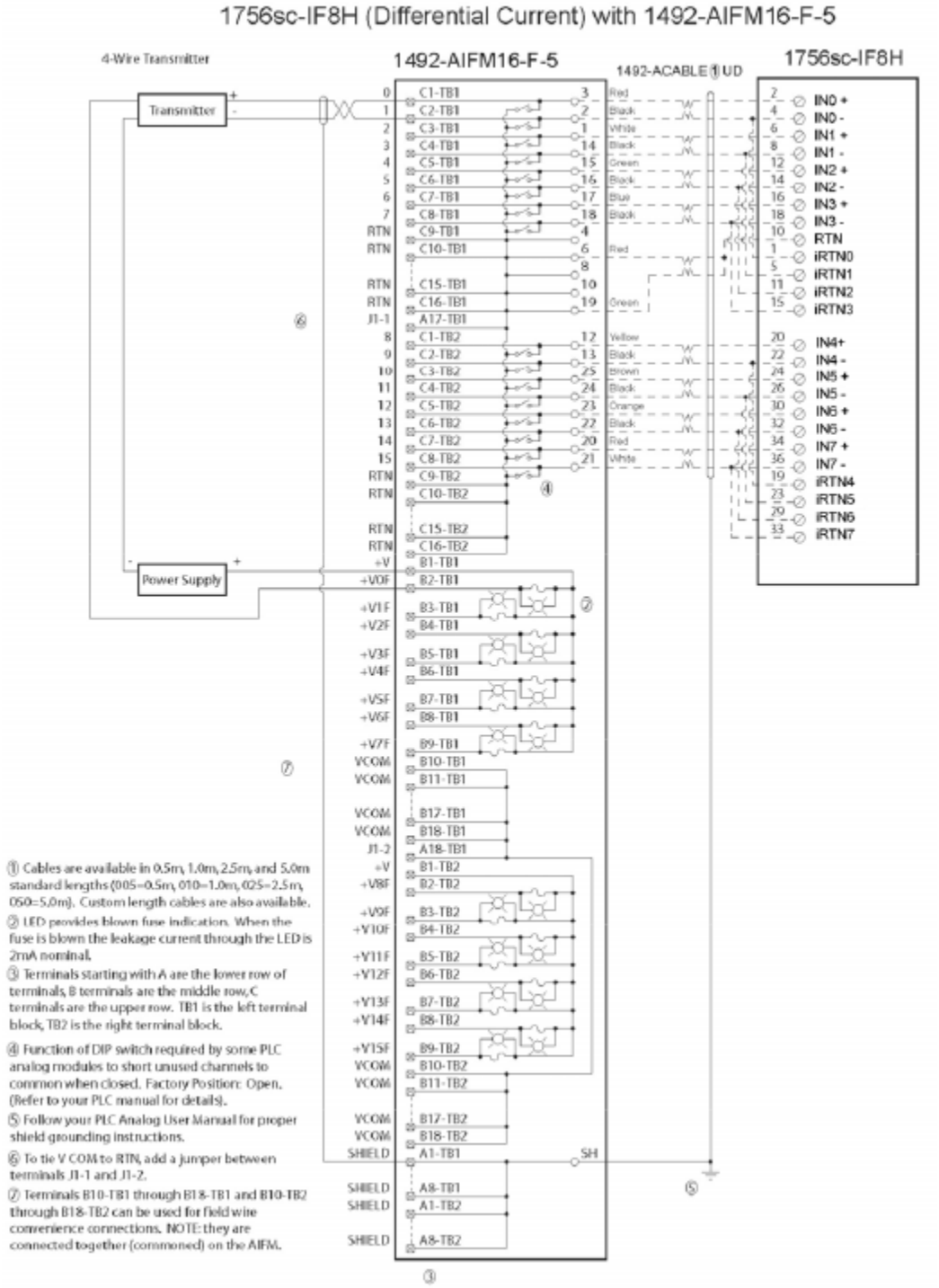
④ Function of DIP switch required by some PLC analog modules to short unused channels to common when closed. Factory Position: Open. (Refer to your PLC manual for details).

⑤ Follow your PLC Analog User Manual for proper shield grounding instructions.

Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

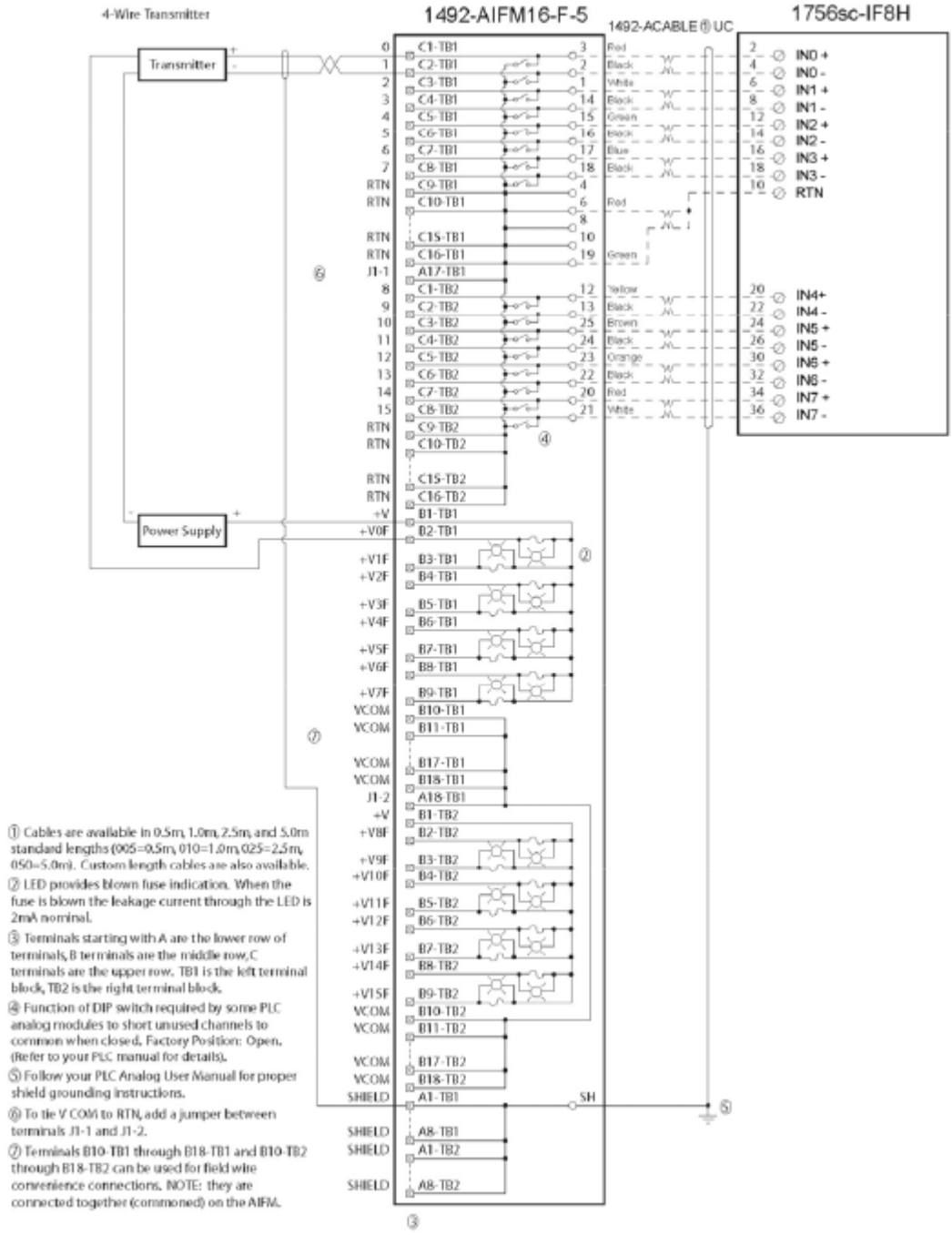
Figure 15. 1756sc-IF8H (8 Differential Voltage) with 1492-AIFM16-F-5)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

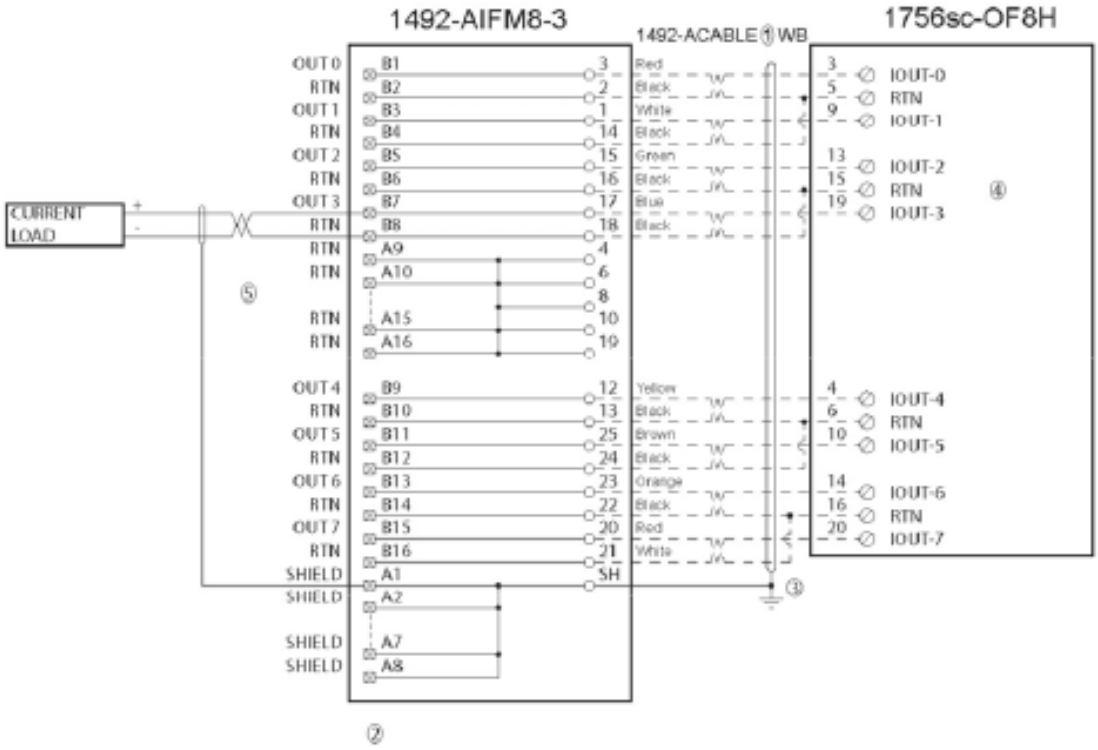
Figure 15. 1756sc-IF8H (8 Differential Voltage) with 1492-AIFM16-F-5, contd.)



Spectrum Controls, Inc.
1705 132nd Ave NE
Bellevue, WA 98005 USA

Telephone: (425) 746-9481
Fax: (425) 641-9473
Web Site: www.spectrumcontrols.com

Figure 16. 1756sc-OF8H (Current) with 1492-AIFM8-3)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

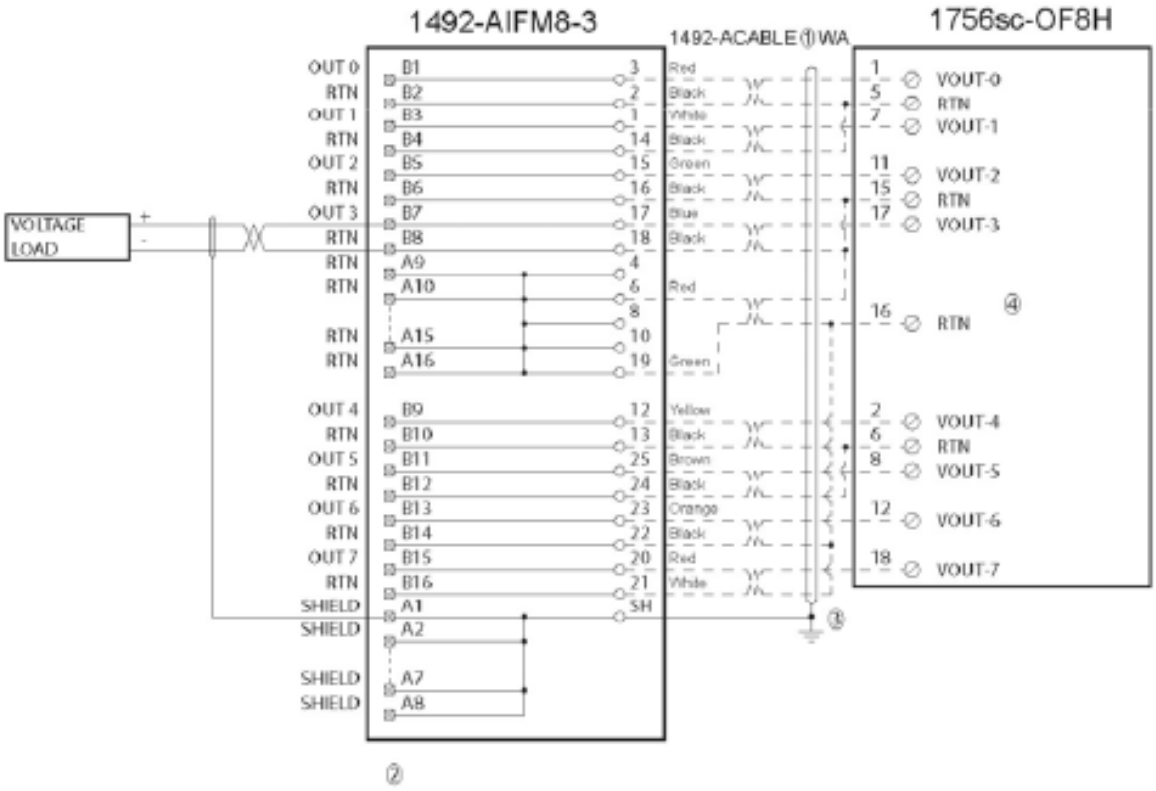
② Terminals starting with A are the lower row of terminals, B terminals are the upper row.

③ Follow your PLC Analog User Manual for proper shield grounding instructions.

④ RTN terminals are internally connected on the 1756-OF8.

⑤ Terminals A9 through A16 can be used for field wire convenience terminals. NOTE: this is only true for this module combination, since the 1492-ACABLExxxWB does not connect to these terminals.

Figure 17. 1756sc-OF8H (Current) with 1492-AIFM8-3, contd.)



① Cables are available in 0.5m, 1.0m, 2.5m, and 5.0m standard lengths (005=0.5m, 010=1.0m, 025=2.5m, 050=5.0m). Custom length cables are also available.

② Terminals starting with A are the lower row of terminals, B terminals are the upper row.

③ Follow your PLC Analog User Manual for proper shield grounding instructions.

④ RTN terminals are internally connected on the 1756-OF8.