Instructions-Parts

IS Power Supply Modules

332196D

EN

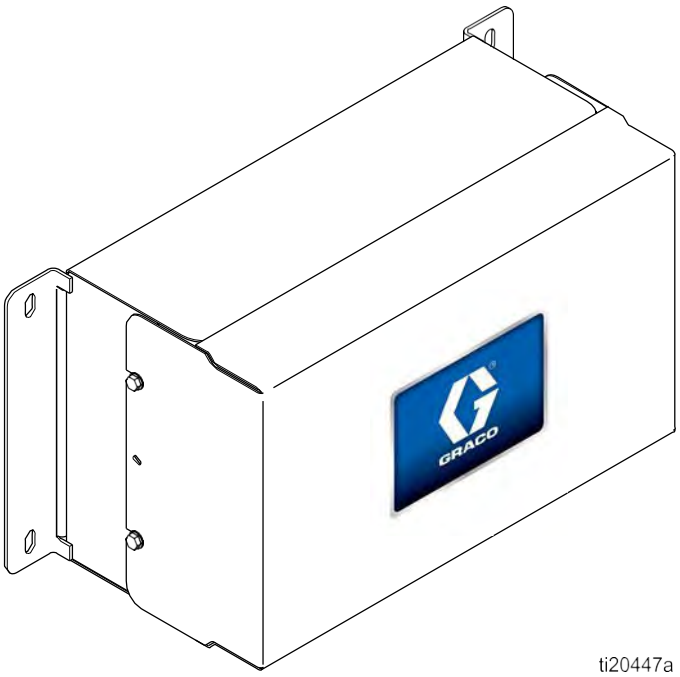
Intrinsically Safe Power Supply Modules for use with ADCM and DCM control modules in permanently installed industrial fluid supply systems. For professional use only.

Not approved for use in explosive atmospheres or hazardous locations.

Important Safety Instructions

Read all warnings and instructions in this manual and in your system manual before using the equipment. Save these instructions.

See page 3 for model information, including approvals.



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Contents

Related Manuals

Manual No.	Description
3A5056	G-Barrier, Instructions-Installation manual
332013	DCM and ADCM, Instructions manual

Approvals

Part	Barrier Approvals	Power Supply Module Approvals
Model 16M167, Power Supply with Safety Barrier	CE 0102 Ex II (1)GD I (M1) [Ex ia Ga] IIC [Ex ia Da] IIIC [Ex ia Ma] I (-20°C≤T≤60°C) c FM us APPROVED For use in CLASS I, DIVISION 2 hazardous (classified) location and provides intrinsically safe "Entity" connections CLASS I, II, III; DIVISION 1; applicable groups when connected per P+F Dwg No 116-0118. T5 (Ta = 60°C) c UL us LISTED 33R6 For use in CLASS I, DIVISION 2, GROUP D (USA only) providing intrinsically safe circuits for use in CLASS I, II, III; GROUP A, B, C, D, F, G and nonincendive circuits for use in CLASS I, II, III; DIVISION 2; GROUP A, B, C, D, F, G hazardous locations when connected in accordance with P+F Dwg No 116-0139 (US) or 116-0140 (Canada). CSA LR65756 For use in CLASS I, ZONE 2, GROUP IIC, IIB, IIA or CLASS 1, DIVISION 2, GROUP A, B, C, D hazardous (classified) location. Provides intrinsically safe circuits for CLASS I, ZONE 0, 1, or 2; or CLASS I, II, III; applicable groups when connected per P+F Dwg No. 116-0119. A temperature rating of T4 applies.	MET c us CE E115887 Complies with UL 508A CSA C22.2 No. 286 and UL 698A **Certified to CSA STD C22.2 No. 286**
Model 26C724, Power Supply with G-Barrier	CE 2575 Ex II (1) G [Ex ia Ga] IIA 0°C ≤ Ta ≤ 54°C IECEx FMG 18.0022 FM18ATEX0053 c FM us APPROVED For connection to: CLASS I, DIVISION 1, GROUP D (USA & CANADA) CLASS I, ZONE 0, [AEx ia Ga] IIA (USA) 0°C ≤ Ta ≤ 54°C FM18US0213 FM18CA0102	

Power Module Output Entity Parameters

16M167 Single Barrier Channel*	
	Power Supply
Uo	15.75 V
Io	723 mA
Po	2.84 W
Co	5.38 µF
Lo	570 µH
26C724 G-Barrier (3 Channel)**	
	Power Supply
Uo	16.4 V
Io	592.2 mA
Po	2.82 W
Co	2.4 µF
Lo	64 µH

***** Entity parameters and hazardous location information are from Pepperl+Fuchs Barrier Product Data Sheets.

****** Each of the three output channels have the same entity parameters.

See manual 3A5056 for more detailed information about the G-Barrier.

Warnings

The following warnings are for the setup, use, grounding, maintenance, and repair of this equipment. The exclamation point symbol alerts you to a general warning and the hazard symbols refer to procedure-specific risks. When these symbols appear in the body of this manual, refer back to these Warnings. Product-specific hazard symbols and warnings not covered in this section may appear throughout the body of this manual where applicable.

WARNING

FIRE AND EXPLOSION HAZARD

Flammable fumes, such as solvent and paint fumes, in **work area** can ignite or explode. This equipment is not for use in explosive atmospheres or hazardous locations. To help prevent fire and explosion:

- Do not install equipment approved only for non-hazardous locations in a hazardous location.
- Do not substitute components. Substitution of components may impair intrinsic safety.
- Intrinsically safe field wiring and non-intrinsically safe field wiring must not be run in the same wireway.
- The grounding bus of the intrinsic safety barrier assemblies shall be bonded to the designated grounding point of the supply system via separate insulated conductors.
- Equipment that comes in contact with the safety barrier's intrinsically safe terminals must be rated for Intrinsic Safety. This includes DC voltage meters, ohmmeters, cables, and connections.
- Disconnect power source before servicing or electrically wiring.
- Do not operate the Power Supply Module with the cover removed.
- Do not alter or modify equipment. Alterations or modifications may void agency approvals and create safety hazards.
- Make sure all equipment is rated and approved for the environment in which you are using it.
- Use equipment only for intended purpose. Call your distributor for information.
- Comply with all applicable safety regulations.

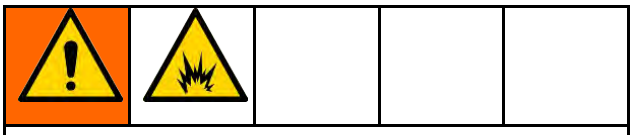
ELECTRIC SHOCK HAZARD

This equipment must be grounded. Improper grounding, setup, or usage of the system can cause electric shock.

- Turn off and disconnect power at main switch before disconnecting any cables and before servicing or installing equipment.
- Connect only to grounded power source.
- All electrical wiring must be done by a qualified electrician and comply with all local codes and regulations.

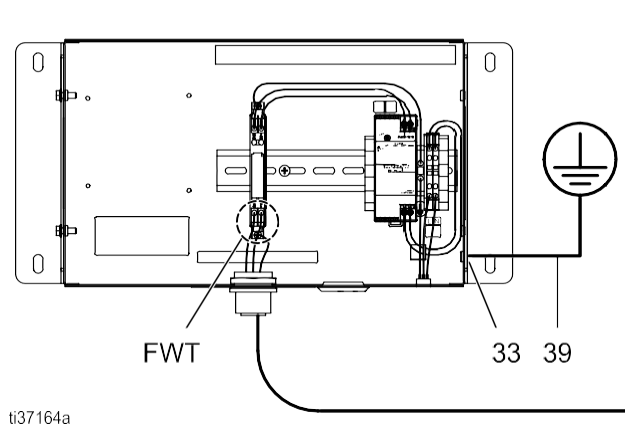
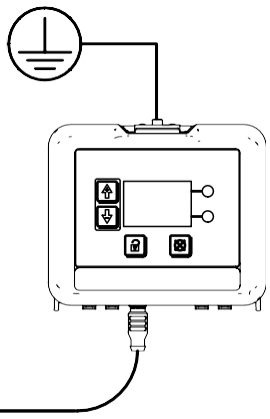
Installation

Location



This equipment is not for use in explosive atmospheres or hazardous locations. Do not install equipment approved only for non-hazardous locations in a hazardous location.

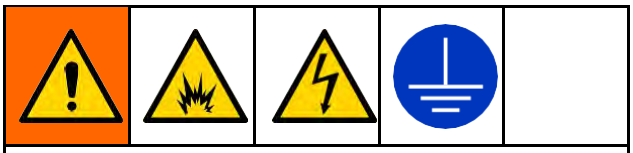
Install the Power Supply Module in a non-hazardous location.

Non-Hazardous Location	Hazardous Location
	
16M167 or 26C724 Power Supply Module	Graco DCM and ADCM Control Modules

Mounting

1. See Mounting Dimensions, page 15.
2. Ensure that the wall and mounting hardware are strong enough to support the weight of the equipment, cables, and stress caused during operation.
3. Using the equipment as a template, mark the mounting holes on the wall at a convenient height for the operator and so equipment is easily accessible.
4. Drill mounting holes in the wall. Install anchors as needed.
5. Bolt equipment securely.

Grounding



The equipment must be grounded to reduce the risk of static sparking and electric shock. Electric or static sparking can cause fumes to ignite or explode. Improper grounding can cause electric shock. Grounding provides an escape wire for the electric current.

1. Connect the supply ground wire (GR) to the ground terminal block (13). See Electrical Power Connections, page 6 .
2. Connect a chassis ground wire (39) as shown in the above diagram in Location, page 5 . Loosen the ground screw (33) and attach the ground wire. Tighten the ground screw securely. Connect the other end of the ground wire to a true earth ground.

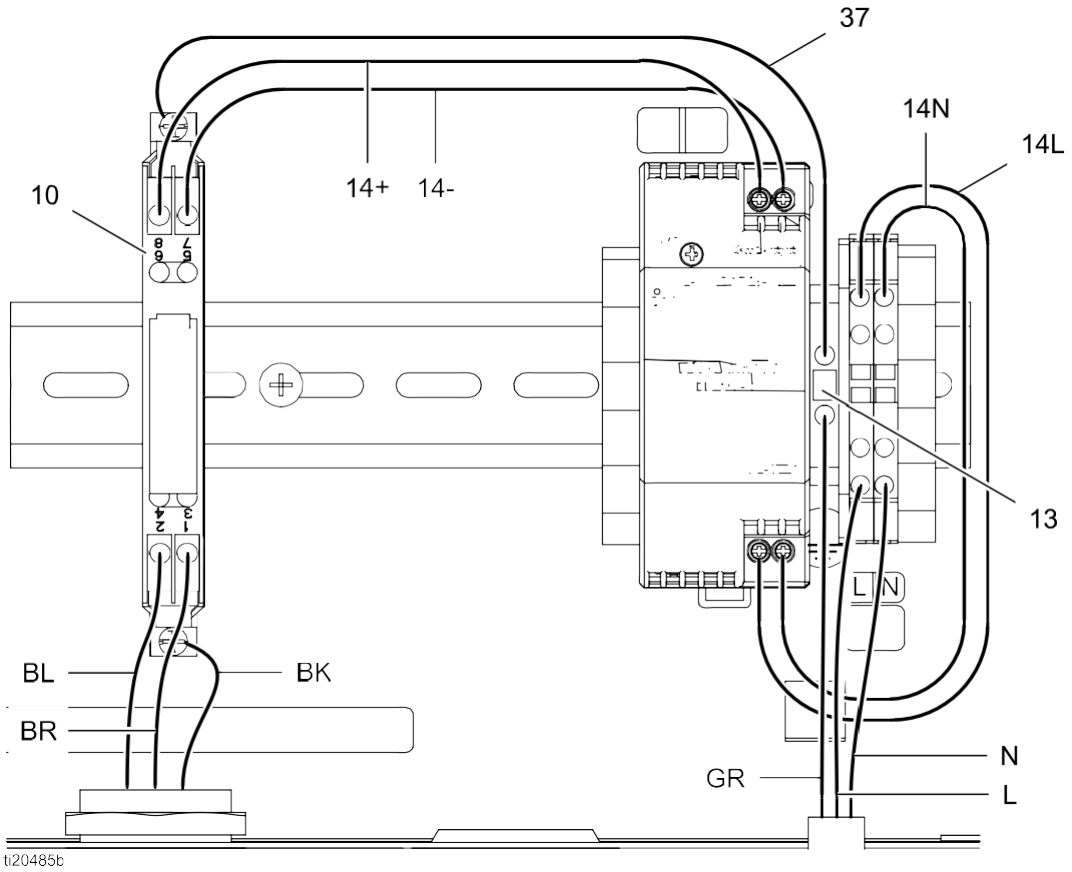
Electrical Power Connections

16M167 Power Supply Module Connections

1. Connect supply wires (L and N) through a conduit or cord harness strain relief to terminals L and N on the terminal blocks.
2. Connect supply ground wire (GR) to ground terminal block (13).

Power Input Requirements:

- 100–240 VAC
- 50–60 Hz
- 1 Amp
- 14 ga. wire minimum, with 15 Amp circuit protection



KEY	
B	IS Ground (Black wire connected to ground terminal)
B	IS Power Wire (Blue wire connected to terminal 2)
B	IS Common Wire (Brown wire connected to terminal 1)
GR	Supply Ground Wire
L	Supply Line Wire
N	Supply Neutral Wire

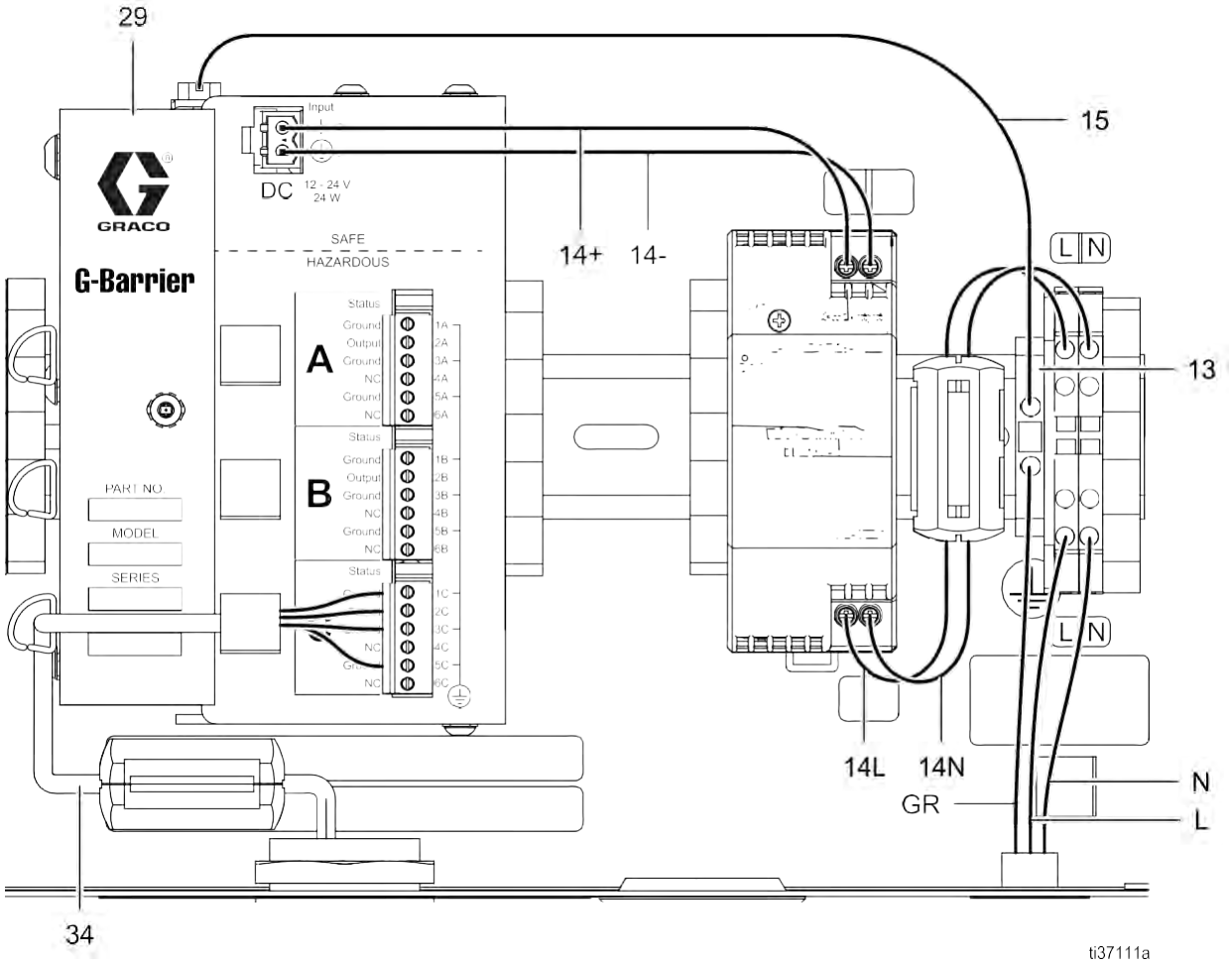
KEY	
10	Intrinsically Safe Barrier
13	Ground Terminal Block
14+ 14	Power Supply output power
14L 14N	Power Supply input power
37	Ground wire to barrier

26C724 Power Supply Module Connections

1. Connect supply wires (14L and 14N) through a conduit or cord harness strain relief to terminals L and N on the terminal blocks.
2. Connect supply ground wire (GR) to ground terminal block (13).

Power Input Requirements:

- 100–240 VAC
- 50–60 Hz
- 1 Amp
- 14 ga. wire minimum, with 15 Amp circuit protection

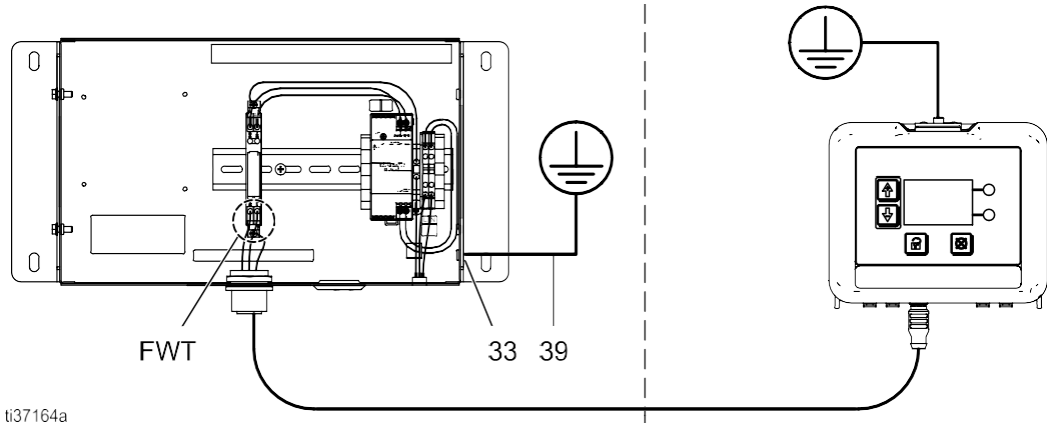


KEY	
GR	Supply Ground Wire
L	Supply Line Wire
N	Supply Neutral Wire
13	Ground Terminal Block
14+ 14-	Power Supply output power
14L 14N	Power Supply input power

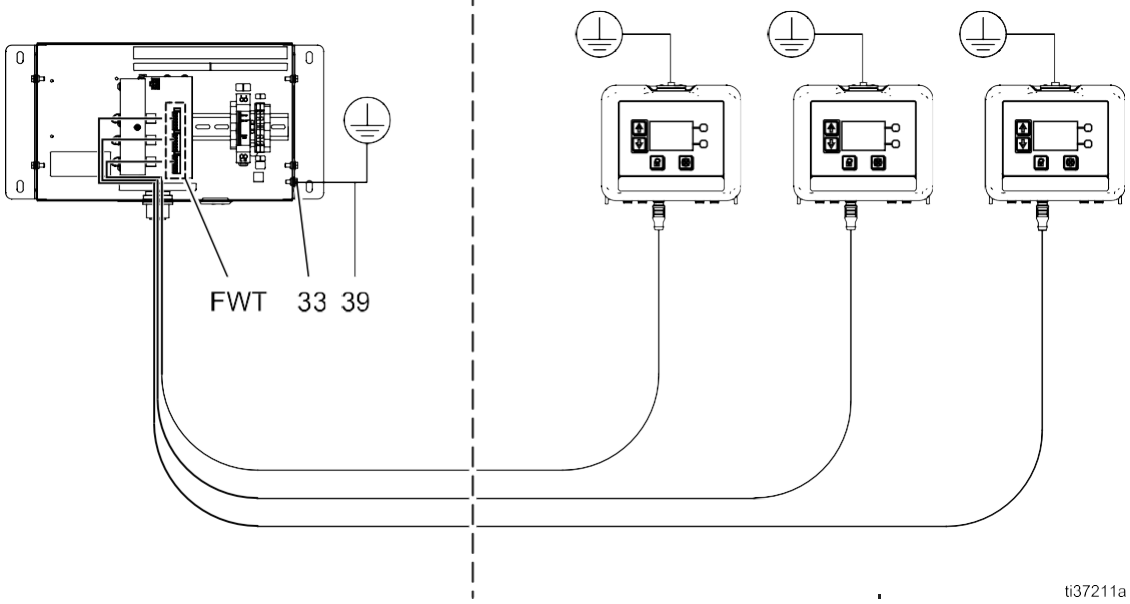
KEY	
1	Ground (from the Ground Terminal Block (13) to the G-Barrier (29))
29	G-Barrier
3	IS Power Cable (from the G-Barrier (29) to hazardous location fluid panel; installed in factory, see G-Barrier manual, 3A5056, for barrier output electrical connection)

Control Drawings

16M167 Power Supply Module Control Drawing

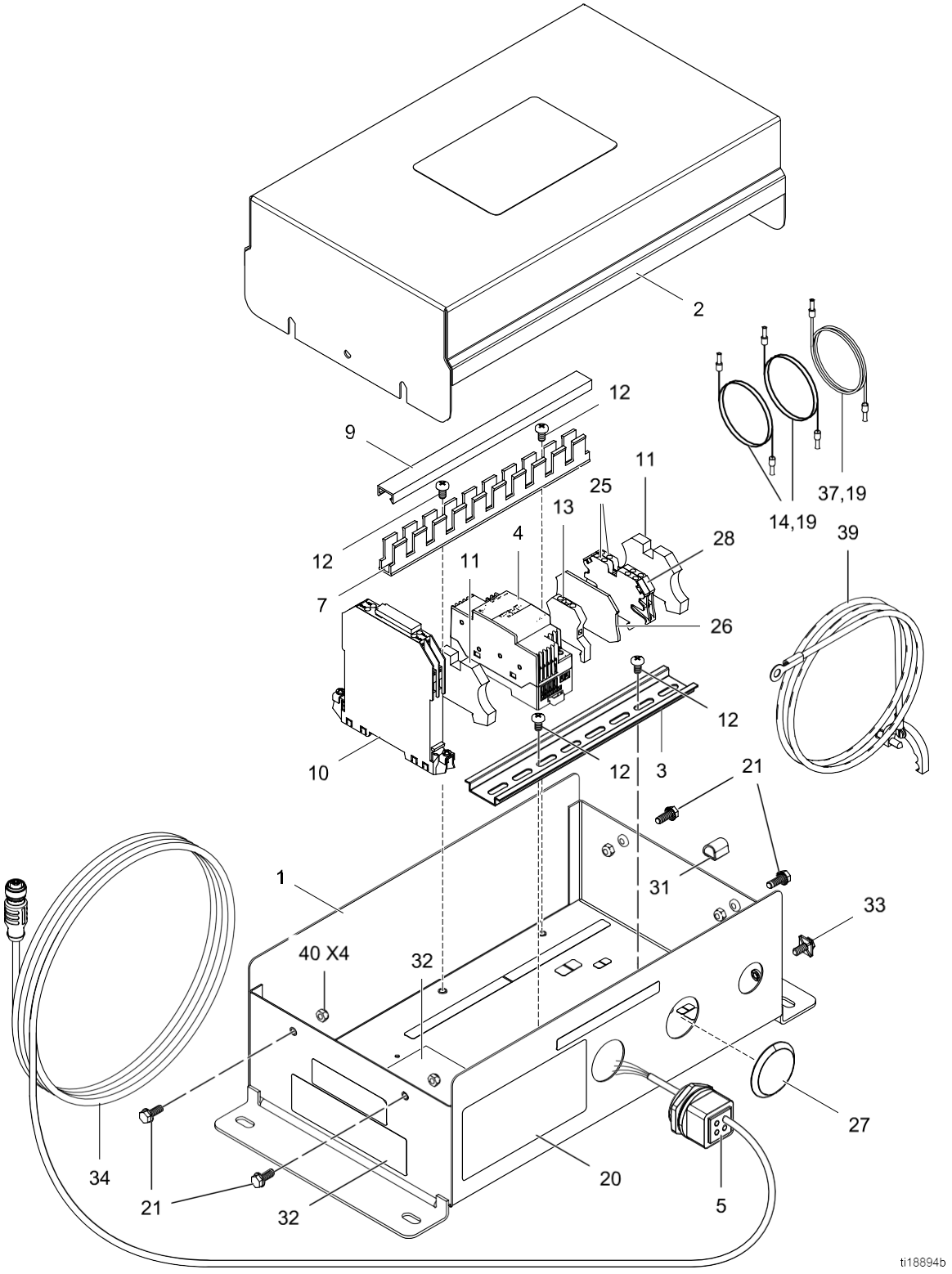
Non-Hazardous Location	Hazardous (Classified) Location
	
16M167 Power Supply Module, with a maximum cable length of 150 ft. • Power Input 100–240 VAC, 15 Amp breaker, 14 ga. wire minimum. • IS field wiring terminal (FWT), shown with cable connected to power input port #3 of a Graco DCM or ADCM. • See the control drawing for the IS safety barrier for permitted connections, identification of the electrical entity parameters of the barrier, and related information for safe connections.	Graco DCM and ADCM. (See manual, 332013, for control drawing.) Uo = 17.9 V Io = 725 mA Po = 2.9 W Co = 2.3 µF Lo = 50 µH Install in accordance with NEC and applicable local codes and regulations. For ATEX, install per EN 60079-14 and applicable local and national codes.

26C724 Power Supply Module Control Drawing

Non-Hazardous Location	Hazardous (Classified) Location
	
26C724 Power Supply Module, with a maximum cable length of 150 ft. • Power Input 100–240 VAC, 15 Amp breaker, 14 ga. wire minimum. • IS field wiring terminal (FWT), shown with cables connected to power input port #3 of each Graco DCM or ADCM. • See the control drawing for the IS safety barrier for permitted connections, identification of the electrical entity parameters of the barrier, and related information for safe connections.	Graco DCM and ADCM. (See manual, 332013, for control drawing.) Uo = 17.9 V Io = 725 mA Po = 2.9 W Co = 2.3 µF Lo = 50 µH Install in accordance with NEC and applicable local codes and regulations. For ATEX, install per EN 60079-14 and applicable local and national codes. (Use accessory cables 19Y502 or 19Y499 for additional IS circuits.)

Parts

Power Supply Module with Safety Barrier, 16M167



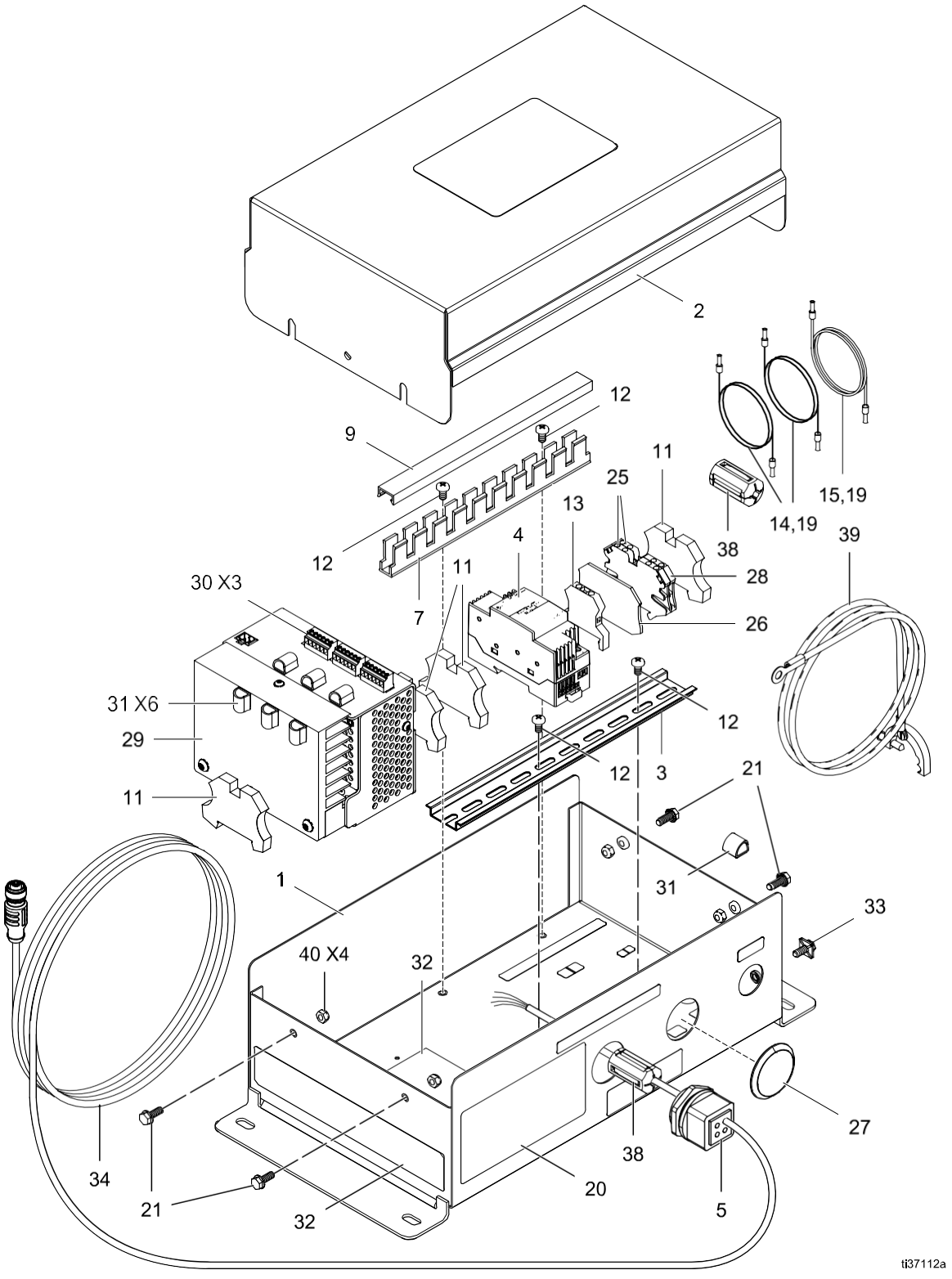
Power Supply Module 16M167

Ref.	Part	Description	Qty.
1	15V339	PANEL	1
2	25P012	COVER	1
3	514014	RAIL, mounting	1
4	16N575	SUPPLY UNIT, power, 15 V	1
5	15V345	GROMMET, cable entry system	1
7	— — —	WIREWAY, base, 1/2 in. x 1 in. x 6 ft.	1
8▲	186620	LABEL, ground symbol	1
9	— — —	WIREWAY, cover, 1/2 in. x 6 ft.	1
10	16N838	BARRIER, intrinsically safe	1
11	— — —	BLOCK, clamp end	2
12	— — —	SCREW, #10 —32 UNF-2A	4
13	— — —	BLOCK, terminal ground	1
14	— — —	WIRE, copper, 16 ga; 9 in (230 mm)	1
19	— — —	FERRULE, wire, 14 awg	10
20▲	15W776	LABEL, warning	1
21	16M007	SCREW	4
25	— — —	BLOCK, four, conductor, terminal	2
26	— — —	TERMINAL, block, end cover	1
27	— — —	PLUG	1
28	— — —	MARKER, block, terminal, 1–10	2
32▲	19Y196	LABEL, multiple warning safety	1
33	— — —	SCREW, ground	1
34	16K509	CABLE, intrinsically safe power	1
37	— — —	WIRE, copper, 14 awg	1
39	223547	CABLE, ground wire; 25 ft.	1
40	— — —	NUT, nylon lock; 10–32	4

▲ *Replacement safety labels, tags, and cards are available at no cost.*

Items marked — — — are not sold separately.

Power Supply Module with G-Barrier, 26C724



Power Supply Module 26C724

Ref.	Part	Description	Qty.
1	15V339	PANEL	1
2	25P012	COVER	1
3	514014	RAIL, mounting	1
4	19Y392	SUPPLY UNIT, power, 24 V	1
5	15V345	GROMMET, cable entry system	1
7	— — —	WIREWAY, base, 1/2 in. x 1 in. x 6 ft.	1
8▲	186620	LABEL, ground symbol	1
9	— — —	WIREWAY, cover, 1/2 in. x 6 ft.	1
11	— — —	BLOCK, clamp end	2
12	— — —	SCREW, #10 —32 UNF-2A	4
13	— — —	BLOCK, terminal ground	1
14	— — —	WIRE, copper, 16 ga; 9 in (230 mm)	1
15	— — —	HARNESS, power in/ground; 14 ga	1
19	— — —	FERRULE, wire, 14 awg	8
20▲	15W776	LABEL, warning	1
21	16M007	SCREW	4
25	— — —	BLOCK, four, conductor, terminal	2
26	— — —	TERMINAL, block, end cover	1
27	— — —	PLUG	1
28	— — —	MARKER, block, terminal, 1–10	2
29	26A364	MODULE, instrinsically safe 3–channel power barrier; see manual 3A5056	1
32▲	19Y196	LABEL, multiple warning safety	1
33	— — —	SCREW, ground	1
34	16K509	CABLE, intrinsically safe power	1
35	— — —	BLOCK, end	2
38	— — —	SUPPRESSOR, round snap ferrite	1
39	223547	CABLE, ground wire; 25 ft.	1
40	— — —	NUT, nylon lock; 10–32	4

▲ *Replacement safety labels, tags, and cards are available at no cost.*

Items marked — — — are not sold separately.

Kits and Accessories

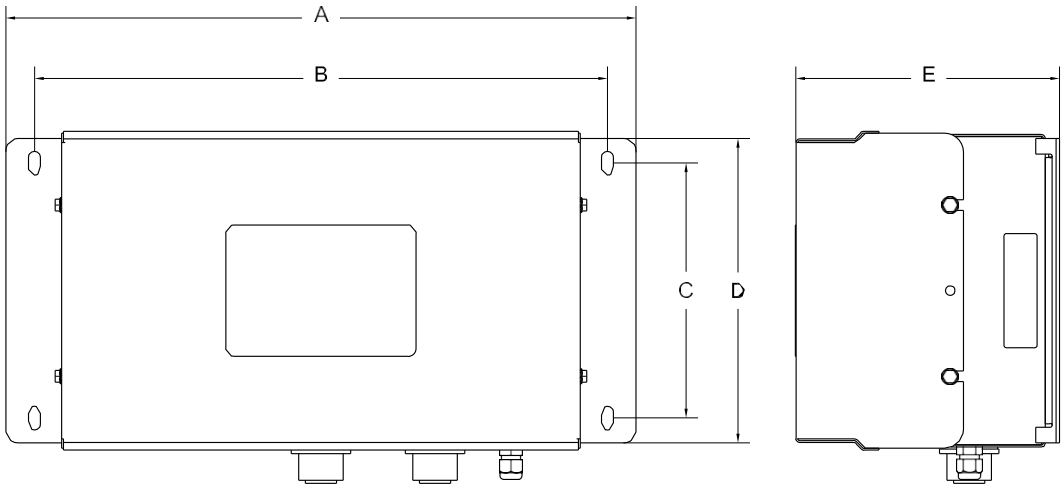
19Y502, Power Cable with Ferrite, IS

100 ft. (30 m) power cable for connecting the 16M167 or 26C724 IS Power Supply Module to a control module located in the hazardous location. The cable has a female reverse key (B-code) 5–pin M12 connector on one end and flying leads on the other.

19Y499, Power Cable with Ferrite, IS

50 ft (15 m) power cable for connecting the 16M167 or 26C724 IS Power Supply Module to a control module located in the hazardous location. The cable has a female reverse key (B-code) 5–pin M12 connector on one end and flying leads on the other.

Mounting Dimensions



Component	A in. (cm)	B in. (cm)	C in. (cm)	D in. (cm)	E in. (cm)
IS Power Supply Module	16.6 (42.2)	15.0 (38.1)	6.7 (17.0)	8.2 (20.8)	6.8 (17.3)

Notes

Technical Specifications

IS Power Supply Module	16M167		26C724	
	US	Metric	US	Metric
Enclosure material	Painted carbon steel			
Weight	9 lb	4.1 kg	9.75 lb	4.4 kg
Power Input				
Voltage	100–240 VAC; nominal		100–240 VAC; nominal	
Frequency	50/60 Hz; nominal			
Phase	1			
Amps	1 A maximum draw			
Power Barrier Output				
Voltage	15 VDC		24 VDC	
Amps	160 mA maximum		160 mA maximum; for each of the three channels	
Environmental				
Operating temperature	–4° to 104°F	–20° to 40°C	–4° to 104°F	–20° to 40°C
Storage temperature	–13° to 158°F	–25° to 70°C	–13° to 158°F	–25° to 70°C
Operating and storage humidity	maximum 75% non-condensing			

Graco Standard Warranty

Graco warrants all equipment referenced in this document which is manufactured by Graco and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser for use. With the exception of any special, extended, or limited warranty published by Graco, Graco will, for a period of twelve months from the date of sale, repair or replace any part of the equipment determined by Graco to be defective. This warranty applies only when the equipment is installed, operated and maintained in accordance with Graco's written recommendations.

This warranty does not cover, and Graco shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-Graco component parts. Nor shall Graco be liable for malfunction, damage or wear caused by the incompatibility of Graco equipment with structures, accessories, equipment or materials not supplied by Graco, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by Graco.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized Graco distributor for verification of the claimed defect. If the claimed defect is verified, Graco will repair or replace free of charge any defective parts. The equipment will be returned to the original purchaser transportation prepaid. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor, and transportation.

THIS WARRANTY IS EXCLUSIVE, AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

Graco's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

GRACO MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY GRACO. These items sold, but not manufactured by Graco (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. Graco will provide purchaser with reasonable assistance in making any claim for breach of these warranties.

In no event will Graco be liable for indirect, incidental, special or consequential damages resulting from Graco supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of Graco, or otherwise.

FOR GRACO CANADA CUSTOMERS

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Graco Information

For the latest information about Graco products, visit www.graco.com.
For patent information, see www.graco.com/patents.

To place an order, contact your Graco Distributor or call to identify the nearest distributor.

Phone: 612-623-6921 **or Toll Free:** 1-800-328-0211 **Fax:** 612-378-3505

All written and visual data contained in this document reflects the latest product information available at the time of publication.
Graco reserves the right to make changes at any time without notice.
Original Instructions. This manual contains English. MM 332196

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