

PowerFlex 755 On-Machine Drive

Catalog Number 26G

The PowerFlex® 755 On-Machine™ Drive is designed for automotive, packaging, and material handling customer conveyance applications, including: transfer tables, vertical lifts, power roll beds, framers, and turntables. The IP66 enclosure permits mounting on the machine or near the motor, to reduce cable lengths and minimize installation costs. Customers can select Safe Torque Off, Network-Integrated Safety, braking controls, control and input power, and encoder types to meet their specific application needs. All connections are made using quick-connect receptacles that mount directly to the enclosure.



ATTENTION: Read this document and the documents listed in the Additional Resources section about installation, configuration and operation of this equipment before you install, configure, operate or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice. If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

注意: 在安装、配置、操作和维护本产品前, 请阅读本文档以及“其他资源”部分列出的有关设备安装、配置和操作的相应文档。除了所有适用规范、法律和标准的相关要求之外, 用户还必须熟悉安装和接线说明。

安装、调整、投运、使用、组装、拆卸和维护等各项操作必须由经过适当训练的专业人员按照适用的操作规范实施。

如果未按照制造商指定的方式使用该设备, 则可能会损害设备提供的保护。

ATENCIÓN: Antes de instalar, configurar, poner en funcionamiento o realizar el mantenimiento de este producto, lea este documento y los documentos listados en la sección Recursos adicionales acerca de la instalación, configuración y operación de este equipo. Los usuarios deben familiarizarse con las instrucciones de instalación y cableado y con los requisitos de todos los códigos, leyes y estándares vigentes.

El personal debidamente capacitado debe realizar las actividades relacionadas a la instalación, ajustes, puesta en servicio, uso, ensamblaje, desensamblaje y mantenimiento de conformidad con el código de práctica aplicable. Si este equipo se usa de una manera no especificada por el fabricante, la protección provista por el equipo puede resultar afectada.

ATENÇÃO: Leia este e os demais documentos sobre instalação, configuração e operação do equipamento que estão na seção Recursos adicionais antes de instalar, configurar, operar ou manter este produto. Os usuários devem se familiarizar com as instruções de instalação e fiação além das especificações para todos os códigos, leis e normas aplicáveis.

É necessário que as atividades, incluindo instalação, ajustes, colocação em serviço, utilização, montagem, desmontagem e manutenção sejam realizadas por pessoal qualificado e especializado, de acordo com o código de prática aplicável.

Caso este equipamento seja utilizado de maneira não estabelecida pelo fabricante, a proteção fornecida pelo equipamento pode ficar prejudicada.

ВНИМАНИЕ: Перед тем как устанавливать, настраивать, эксплуатировать или обслуживать данное оборудование, прочитайте этот документ и документы, перечисленные в разделе «Дополнительные ресурсы». В этих документах изложены сведения об установке, настройке и эксплуатации данного оборудования. Пользователи обязаны ознакомиться с инструкциями по установке и прокладке соединений, а также с требованиями всех применимых норм, законов и стандартов.

Все действия, включая установку, наладку, ввод в эксплуатацию, использование, сборку, разборку и техническое обслуживание, должны выполняться обученным персоналом в соответствии с применимыми нормами и правилами.

Если оборудование используется не предусмотренным производителем образом, защита оборудования может быть нарушена.

注意: 本製品を設置、構成、稼働または保守する前に、本書および本機器の設置、設定、操作についての参考資料の該当箇所に記載されている文書に目を通してください。ユーザは、すべての該当する条例、法律、規格の要件に加えて、設置および配線の手順に習熟している必要があります。

設置調整、運転の開始、使用、組立て、解体、保守を含む諸作業は、該当する実施規則に従って訓練を受けた適切な作業員が実行する必要があります。本機器が製造メーカにより指定されていない方法で使用されている場合、機器により提供されている保護が損なわれる恐れがあります。

ACHTUNG: Lesen Sie dieses Dokument und die im Abschnitt „Weitere Informationen“ aufgeführten Dokumente, die Informationen zu Installation, Konfiguration und Bedienung dieses Produkts enthalten, bevor Sie dieses Produkt installieren, konfigurieren, bedienen oder warten. Anwender müssen sich neben den Bestimmungen aller anwendbaren Vorschriften, Gesetze und Normen zusätzlich mit den Installations- und Verdrahtungsanweisungen vertraut machen.

Arbeiten im Rahmen der Installation, Anpassung, Inbetriebnahme, Verwendung, Montage, Demontage oder Instandhaltung dürfen nur durch ausreichend geschulte Mitarbeiter und in Übereinstimmung mit den anwendbaren Ausführungsvorschriften vorgenommen werden.

Wenn das Gerät in einer Weise verwendet wird, die vom Hersteller nicht vorgesehen ist, kann die Schutzfunktion beeinträchtigt sein.

ATTENTION : Lisez ce document et les documents listés dans la section Ressources complémentaires relatifs à l'installation, la configuration et le fonctionnement de cet équipement avant d'installer, configurer, utiliser ou entretenir ce produit. Les utilisateurs doivent se familiariser avec les instructions d'installation et de câblage en plus des exigences relatives aux codes, lois et normes en vigueur.

Les activités relatives à l'installation, le réglage, la mise en service, l'utilisation, l'assemblage, le démontage et l'entretien doivent être réalisées par des personnes formées selon le code de pratique en vigueur.

Si cet équipement est utilisé d'une façon qui n'a pas été définie par le fabricant, la protection fournie par l'équipement peut être compromise.

주의: 본 제품 설치, 설정, 작동 또는 유지 보수하기 전에 본 문서를 포함하여 설치, 설정 및 작동에 관한 참고 자료 섹션의 문서들을 반드시 읽고 숙지하십시오. 사용자는 모든 관련 규정, 법규 및 표준에서 요구하는 사항에 대해 반드시 설치 및 배선 지침을 숙지해야 합니다.

설치, 조정, 가동, 사용, 조립, 분해, 유지보수 등 모든 작업은 관련 규정에 따라 적절한 교육을 받은 사용자를 통해서만 수행해야 합니다.

본 장비를 제조사가 명시하지 않은 방법으로 사용하면 장비의 보호 기능이 손상될 수 있습니다.

ATTENZIONE Prima di installare, configurare ed utilizzare il prodotto, o effettuare interventi di manutenzione su di esso, leggere il presente documento ed i documenti elencati nella sezione "Altre risorse", riguardanti l'installazione, la configurazione ed il funzionamento dell'apparecchiatura. Gli utenti devono leggere e comprendere le istruzioni di installazione e cablaggio, oltre ai requisiti previsti dalle leggi, codici e standard applicabili.

Le attività come installazione, regolazioni, utilizzo, assemblaggio, disassemblaggio e manutenzione devono essere svolte da personale adeguatamente addestrato, nel rispetto delle procedure previste.

Qualora l'apparecchio venga utilizzato con modalità diverse da quanto previsto dal produttore, la sua funzione di protezione potrebbe venire compromessa.

DİKKAT: Bu ürünün kurulumu, yapılandırılması, işletilmesi veya bakımı öncesinde bu dokümanı ve bu ekipmanın kurulumu, yapılandırılması ve işletimi ile ilgili İlave Kaynaklar bölümünde yer listelenmiş dokümanları okuyun. Kullanıcılar yürürlükteki tüm yönetmelikler, yasalar ve standartların gereksinimlerine ek olarak kurulum ve kablolama talimatlarını da öğrenmek zorundadır.

Kurulum, ayarlama, hizmete alma, kullanma, parçaları birleştirme, parçaları sökme ve bakım gibi aktiviteler sadece uygun eğitimleri almış kişiler tarafından yürürlükteki uygulama yönetmeliklerine uygun şekilde yapılabilir.

Bu ekipman üretici tarafından belirlenmiş amaç dışında kullanılırsa, ekipman tarafından sağlanan koruma bozulabilir.

注意事項: 在安装、設定、操作或維護本產品前, 請先閱讀此文件以及列於「其他資源」章節中有關安裝、設定與操作此設備的文件。使用者必須熟悉安裝和配線指示, 並符合所有法規、法律和標準要求。

包括安裝、調整、交付使用、使用、組裝、拆卸和維護等動作都必須交由已經過適當訓練的人員進行, 以符合適用的實作法規。

如果將設備用於非製造商指定的用途時, 可能會造成設備所提供的保護功能受損。

POZOR: Než začnete instalovat, konfigurovat či provozovat tento výrobek nebo provádět jeho údržbu, přečtěte si tento dokument a dokumenty uvedené v části Dodatečné zdroje ohledně instalace, konfigurace a provozu tohoto zařízení. Uživatelé se musejí vedle požadavků všech relevantních vyhlášek, zákonů a norem nutně seznámit také s pokyny pro instalaci a elektrické zapojení.

Činnosti zahrnující instalaci, nastavení do provozu, užívání, montáž, demontáž a údržbu musí vykonávat vhodně proškolený personál v souladu s příslušnými prováděcími předpisy.

Pokud se toto zařízení používá způsobem neodpovídajícím specifikaci výrobce, může být narušena ochrana, kterou toto zařízení poskytuje.

UWAGA: Przed instalacją, konfiguracją, użytkowaniem lub konserwacją tego produktu należy przeczytać niniejszy dokument oraz wszystkie dokumenty wymienione w sekcji Dodatkowe źródła omawiające instalację, konfigurację i procedury użytkowania tego urządzenia. Użytkownicy mają obowiązek zapoznać się z instrukcjami dotyczącymi instalacji oraz oprzewodowania, jak również z obowiązującymi kodeksami, prawem i normami.

Działania obejmujące instalację, regulację, przekazanie do użytkowania, użytkowanie, montaż, demontaż oraz konserwację muszą być wykonywane przez odpowiednio przeszkolony personel zgodnie z obowiązującym kodeksem postępowania.

Jeśli urządzenie jest użytkowane w sposób inny niż określony przez producenta, zabezpieczenie zapewniane przez urządzenie może zostać ograniczone.

Obs! Läs detta dokument samt dokumentet, som står listat i avsnittet Övriga resurser, om installation, konfiguration och drift av denna utrustning innan du installerar, konfigurerar eller börjar använda eller utföra underhållsarbete på produkten. Användare måste bekanta sig med instruktioner för installation och kabeldragning, förutom krav enligt gällande koder, lagar och standarder.

Åtgärder som installation, justering, service, användning, montering, demontering och underhållsarbete måste utföras av personal med lämplig utbildning enligt lämpligt bruk.


Om denna utrustning används på ett sätt som inte anges av tillverkaren kan det hända att utrustningens skyddsanordningar försätts ur funktion.


LET OP: Lees dit document en de documenten die genoemd worden in de paragraaf Aanvullende informatie over de installatie, configuratie en bediening van deze apparatuur voordat u dit product installeert, configureert, bedient of onderhoud. Gebruikers moeten zich vertrouwd maken met de installatie en de bedringsinstructies, naast de vereisten van alle toepasselijke regels, wetten en normen.

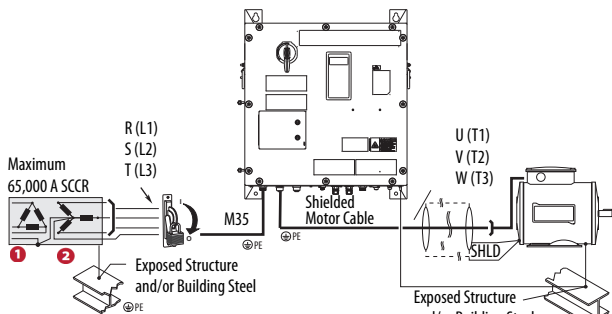
Activiteiten zoals het installeren, afstellen, in gebruik stellen, gebruiken, monteren, demonteren en het uitvoeren van onderhoud mogen uitsluitend worden uitgevoerd door hiervoor opgeleid personeel en in overeenstemming met de geldende praktijkregels.

Indien de apparatuur wordt gebruikt op een wijze die niet is gespecificeerd door de fabrikant, dan bestaat het gevaar dat de beveiliging van de apparatuur niet goed werkt.

Personal Safety and Precautions

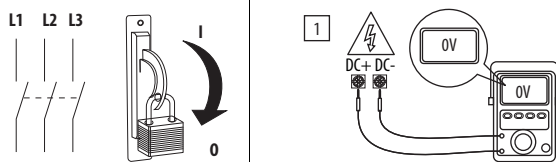
-  **ATTENTION:** This unit has remote sources of power. Disconnect all power sources before the cover is removed. Failure to comply could result in death or serious injury.
- ATTENTION:** Do not attempt to service internal components when the unit is energized. Complete lock out / tag out procedures for all input power sources. Then, remove input power (L123 and 24V DC control power) from terminals CP and CPBR (if used) before cover removal and inspection. Failure to comply can result in death or serious injury.
- ATTENTION:** To avoid an electric shock hazard, verify that the voltage on the bus capacitors has entirely discharged before servicing.
- ATTENTION:** The drive contains high-voltage capacitors that take time to discharge after removal of the main power supply. Before working on the drive, isolate the main power supply from the line input (L123). Wait 3 minutes for the capacitors to discharge to minimal voltage levels. Failure to do so can result in personal injury or death.


-  **ATTENTION:** The 24V DC control power source can be used to aid in troubleshooting, but you must follow local codes while the control power is energized, input power L123 is not energized, and the cover is removed. Control power is connected to receptacles CP (24V DC auxiliary power) and CPBR (24V DC brake options: B2and B3). Failure to comply can result in serious injury or death.





1. From user-supplied 400/480V AC, 3-phase, 50/60-Hz delta-Wye connected power distribution with solidly grounded neutral.
2. If the user-supplied input power distribution exceeds 20 times the drive rating kVA, additional impedance must be supplied in the form of an input line reactor or isolation transformer.


IMPORTANT This lock out / tag out is only for upstream power. During initial installation, the On-Machine Drive does not have power. The breakers should be in the OFF position when the unit arrives. Verify that all breakers are off before installation is started. For more information, see the [Circuit Breakers](#) section.




-  **ATTENTION:**
 - Installation, adjustments, adding into service, use, assembly, disassembly, and maintenance shall be performed by suitably trained personnel in accordance with the applicable code of practice.
 - If this equipment is used in a manner not specified by the manufacturer, the protection that is provided by the equipment, may be impaired.

-  **WARNING:** Circumstances that can cause an explosion may exist, which may lead to personal injury or death, property damage, or economic loss. Tripping of the instantaneous-trip circuit breaker is an indication that a fault current has been interrupted. Current-carrying components of a magnetic motor controller should be examined and replaced if they are damaged to reduce the risk of fire or electrical shock.


-  **ATTENTION:** This publication is intended for qualified service personnel responsible for installing and servicing these devices. The user must have previous experience and a basic understanding of electrical terminology, configuration procedures, required equipment, and safety precautions.

-  **ATTENTION:** The National Electrical Code (NEC), NFPA79, and any other governing regional or local code overrules the information in this publication. Rockwell Automation cannot assume responsibility for the compliance or proper installation of the On-Machine Drive or associated equipment. A hazard of personal injury and/or equipment damage exists if codes are ignored during installation.

Avoid Electrostatic Discharge

-  **ATTENTION:** This drive contains ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions are required when you install, test, service, or repair this assembly. Component damage can result if ESD control procedures are not followed. If you are not familiar with static control procedures, see an applicable ESD protection handbook.

Electrical Safety Considerations

-  **ATTENTION:** To avoid electrical shock, open the appropriate upstream protection (disconnect switch or branch circuit protection) before connecting and disconnecting cables.
- ATTENTION:** Risk of shock exists. Unused receptacles should be capped, the environmental rating may not be maintained when receptacles remain uncapped.
- ATTENTION:** Do not operate controls or open covers without appropriate personal protective equipment. Failure to comply can result in serious injury or death.

IMPORTANT To comply with the CE Low Voltage Directive (LVD), all connections to this equipment must be powered from a source compliant with the following:

- Safety extra low voltage (SELV) Supply
- Protected extra low voltage (PELV) Supply

To comply with UL/C-UL requirements, this equipment must be powered from a source compliant with the following:

- IEC 60950-1 Ed. 2.1, Clause 2.2 - SELV Circuits

Environment and Enclosure

IMPORTANT This equipment is supplied as enclosed equipment. It should not require an additional system enclosure when used in locations consistent with the enclosure type ratings stated in the [Enclosure Specifications](#) section of this publication. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings, beyond what this product provides, that are required to comply with certain product safety certifications. See also the following: NEMA 250 and IEC 60529, as applicable, for explanations of the degrees of protection provided by enclosures

IMPORTANT This equipment is not intended for use in residential environments and may not provide adequate protection to radio communication services in such environments.

IMPORTANT This equipment is intended for use in overvoltage Category III applications (as defined in IEC 60664-1), at altitudes up to 2000 m (6562 ft) at the default carrier frequency without derating. See PowerFlex 755 On-Machine Drive Specifications, publication [750-TD003](#) for altitude and derating information.



At the End of Life, this equipment should be collected separately from any unsorted municipal waste.

Enclosure Specifications

This section lists general specifications for the enclosure. Specifications for the components in the On-Machine Drive are in their respective publications, see [Additional Resources](#).

Condition	Requirement
Ambient Operating Temperature	0 °C...40 °C (32 °F...104 °F)
Storage Temperature	-20 °C...70 °C (-4°F...158 °F)
Relative Humidity	5...95% (non-condensing)
Cabinet Rating ⁽¹⁾	UL Type 12 / IP66 (indoor use only)
Enclosure Dimensions (H x W x D)	609.6 mm x 609.6 mm x 274.4 mm (24 in x 24 in x 11 in)
Product Dimensions Installed (H x W x D)	711.2 mm x 649.8 mm x 391.9 mm (28 in x 25.58 in x 15.43 in)
Packaging Dimensions (H x W x D) with product inside	475 mm x 800 mm x 800 mm (18.69 in x 31.5 in x 31.5 in)
Weight	47.62 kg (105 lbs (apx.))
Weight with packaging	63.95 kg (141 lbs (apx.))
Short-circuit current rating	Maximum short circuit rating 65,000 A RMS symmetrical
Voltage and Power Ratings ⁽²⁾	400V AC, 3 PH, 50-Hz ratings: <ul style="list-style-type: none"> • 8.7 A, 4 kW, Normal Duty • 11.5 A, 5.5 kW, Normal Duty • 15.4 A, 7.5 kW, Normal Duty • 22 A, 11 kW, Normal Duty 480V AC, 3 PH, 60-Hz ratings: <ul style="list-style-type: none"> • 8 A, 5 HP, Normal Duty • 11 A, 7.5 HP, Normal Duty • 14 A, 10 HP, Normal Duty • 22 A, 15 HP, Normal Duty • 14 A, 15 HP, Heavy Duty (only when Motor Type = M2)

(1) Enclosure provides protection from dust and falling debris.

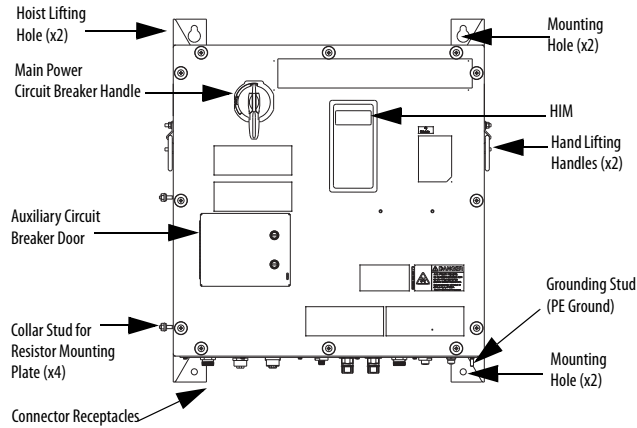
(2) All ratings to support continuous duty. There is no de-rate for duty cycle variations. All ratings are for normal duty except for the variation that has 14 A Heavy-Duty rating.



WARNING: Circumstances that can cause an explosion may exist, which may lead to personal injury or death, property damage, or economic loss. Incoming power requirements must be a delta-Wye solid ground neutral to maintain the CE/UL certification. If the user supplied input power distribution exceeds 20 times the drive rating kVA, additional impedance must be supplied in the form of an input line reactor or isolation transformer.

Drive Features

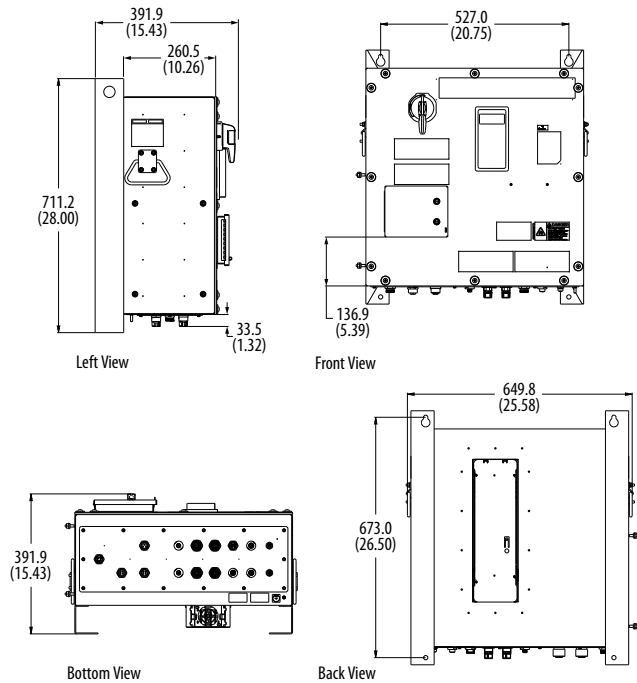
For more information on the drive characteristics and catalog information, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006.



IMPORTANT For proper heat dissipation and product operation, mount the device vertically as shown.

Dimensions

The approximate dimensions are shown in millimeters and (inches).



Receive, Unpack, and Inspect the Drive

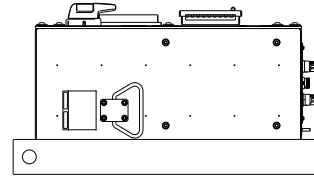
Upon delivery of the drive, refer to the packing slip for sizes and shipping weights. The packing slip lists the items that are included in the shipment. Inspect the shipment for damaged or lost items.

IMPORTANT For drives that were in storage and did not have voltage applied, maintenance of the capacitors in the drive may be required. For drives that are stored under one year, there is no additional maintenance required. For storage greater than one year, see Preventive Maintenance Checklist of Industrial Control and Drive System Equipment, publication DRIVES-TD001 for bus capacitor reforming requirements.

If the packaging appears to be damaged, take photos of the damaged shipment with the packaging, then unpack the equipment for further inspection. Open the cover and inspect the major components for signs of damage. Retain the original packaging for the freight inspector.

IMPORTANT Delivery of equipment from Rockwell Automation to the carrier is considered delivery to the buyer. The carrier becomes liable for any damage that occurs during transit. It is the responsibility of the buyer to notify the proper party if damage is found. The buyer can forfeit any right to recovery for loss or damages by failing to comply with these steps.

1. Inspect the shipping container for any damage that occurred during transit.
2. Remove the cover of the shipping container.
3. Remove the sides of the shipping container.
4. Remove the protective packing materials.
5. Inspect the drive for any damage.
6. If enclosure appears damaged, open the front cover and inspect the major components for damage. For instructions on how to open the front cover, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006.
7. If damage to the enclosure exists:
 - a. Note on the delivery receipt that the equipment is damaged.
 - b. Contact the carrier that delivered the shipment and the authorized Rockwell Automation distributor. The carrier may schedule a freight inspection or will waive their right to inspect. If they waive their right to inspect, obtain the written waiver.
 - c. Retain all product packaging for review by the carrier.



Lift and Transport the Drive

All lifting equipment and components (hooks, bolts, lifts, slings, chains, and others) must be properly sized and rated to safely lift and hold the weight of the drive. Read these precautions before attempting to lift a drive.



ATTENTION: All equipment and hardware that is used to lift the drive must be properly sized and rated to safely lift and hold the weight of the drive. To guard against possible personal injury or equipment damage:

- Inspect all hardware for proper attachment before a drive is lifted.
- Do not allow any part of the drive or lift equipment to contact electrically charged conductors or components.
- Do not subject the drive to high rates of acceleration or deceleration during a lift or transportation.
- Do not allow personnel or their limbs directly beneath the drive during a lift.



ATTENTION: When approaching the full upright (vertical) position, the weight can shift and cause the drive to swing unexpectedly. Control the movement of the drive as it is lifted from the shipping container. Failure to comply can result in personal injury or equipment damage.

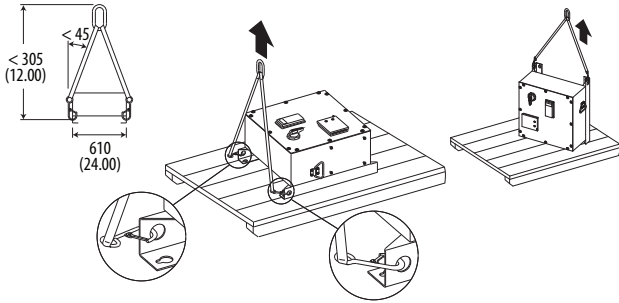
Software Requirements

Network	Software	Version	
EtherNet/IP	RSLinux® Classic	2.50 or later	
	RSLogix 5000®	20.00 or previous	
	Studio 5000 Logix Designer®	21.00 ... 29.00 for hardware-based Safe Torque Off Option Module (20-750-S3)	
		30.00 or later for network-based Safe Torque Off Option Module (20-750-S3)	
		31.00 or later for Integrated Motion on EtherNet/IP networks	
Add-on Profile	Download the most current version from https://compatibility.rockwellautomation.com/Pages/home.aspx		
PowerFlex 755 Firmware		13.00 or later when Safe Torque Off Option Module (20-750-S3) is used, 14.00 or later when Integrated Safety Functions Option Module (20-750-S4) or Integrated motion is used.	

Hoist Lifting

For more information on lifting and transporting the On-Machine Drive, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006.

Dimensions are in millimeters and (inches).

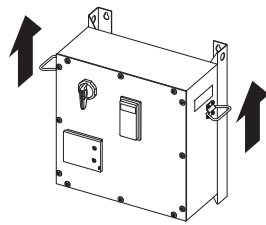


Two-Person Lifting

The On-Machine Drive has a weight greater than 45.36 kg (100 lbs). As a result, it is required to have two people when using the handles to lift the drive. For more information on lifting and transporting the On-Machine Drive, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006.



ATTENTION: Hazard of personal injury and machine damage exists. Do not attach lifting straps to the handles.



Wiring, Grounding, and Drive Power



ATTENTION: A hazard of personal injury and equipment damage exists. A minimum of 10 AWG should be used for the solid earth ground.

IMPORTANT The safety ground, PE, must be connected to earth ground. Some codes may require redundant ground paths and periodic examination of connection integrity.

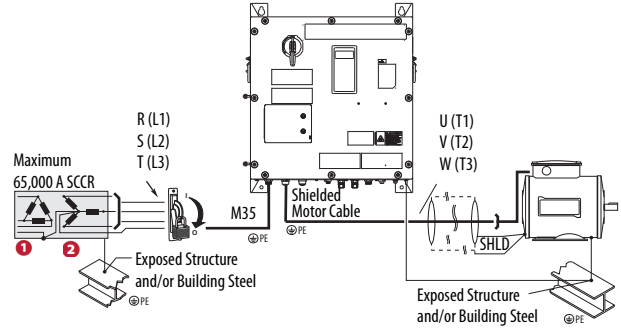
IMPORTANT To avoid electrolytic corrosion on the external earth terminal, avoid spraying moisture directly on the terminal. When used in washdown environments, apply a sealant or other corrosion inhibitor on the external ground terminal to minimize any negative effects of galvanic or electro-chemical corrosion. Ground connections should be inspected regularly.

IMPORTANT For compatibility, the motor cable connector that is selected must provide good 360° contact and low transfer impedance from the shield or armor of the cable to the conduit entry plate at both the motor and the On-Machine Drive, for electrical bonding. The motor cable should be kept as short as possible to avoid electromagnetic emissions and capacitive currents. CE conformity of On-Machine Drive with EMC Directive does not confirm that the entire machine installation complies with CE EMC requirements. **See the National Electrical Code (NEC) NFPA 70 and/or the Electrical Standard for Industrial Machinery NFPA 79 for proper installation details.**

Circuit Protection

Branch circuit protection for the On-Machine Drive is provided by the internal circuit breaker. The feeder available fault current must not exceed 65,000 A RMS symmetrical at 480V AC. Input feeder power fuse and/or circuit breaker protection is required for the M35 input connector and the customer must provide it based on NEC guidelines and specific local codes.

Feeder Circuit Protection



1. From user-supplied 400/480V AC, 3-phase, 50/60-Hz delta-Wye connected power distribution with solidly grounded neutral.
2. If the user-supplied input power distribution exceeds 20 times drive rating kVA, additional impedance must be supplied in the form of an input line reactor or isolation transformer.

Short-circuit current rating (SCCR)

The short circuit rating for the On-Machine Drive is 65,000A RMS at 480V AC. The suitable circuit breaker for this circuit must be capable of delivering not more than 65,000 RMS symmetrical amperes at 480V AC, 100 A maximum, when protected by a Bulletin 140G-H frame circuit breaker. Also, the suitable fuses for this circuit must be capable of delivering not more than 65,000 RMS symmetrical amperes at 480V AC maximum when protected by CC, J, and T classes.

Branch Circuit Protection



WARNING: Circumstances that can cause an explosion may exist, which may lead to personal injury or death, property damage, or economic loss. If the branch circuit protection device trips, you must use the software to verify that the source brake function is still operational before putting the equipment back in service. If the source brake function is not working properly, loss of brake function or motor damage can occur.



WARNING: Circumstances that can cause an explosion may exist, which may lead to personal injury or death, property damage, or economic loss. Do not install the On-Machine Drive where the maximum available fault current exceeds the 65,000 A RMS symmetrical amperes.

IMPORTANT The motor branch circuit protection is provided by the main circuit breaker, which complies with UL508 and CSA guidelines.

Circuit Breakers

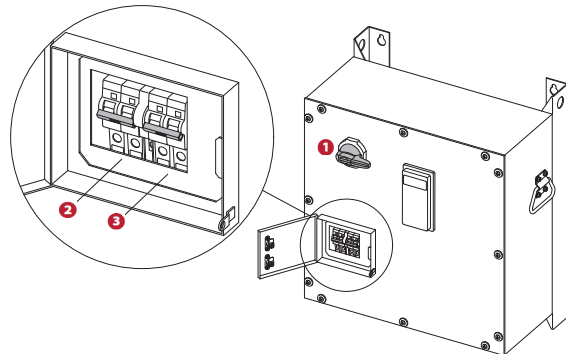
The drive has three circuit breakers that are accessible on the front cover. All three circuit breakers must be ON for the drive to operate and control the motor and brake properly. The 400/480V AC main input rotary circuit breaker provides power through the M35 power connector (Receptacle L123). See [Feeder Circuit Protection on page 4](#) for more information.

The mechanical brake circuit breaker and the control power circuit breaker are located under the auxiliary circuit breaker door and are provided power by Receptacles CP (24V DC auxiliary power), CPBR (24V DC brake option B2 and B3), and L123 (source brake option SB). The brake circuit breaker will vary in design and operation based on it being a 24V DC mechanical brake or 480V source mechanical brake.



ATTENTION: Do not cycle 400/480V AC power more frequently than one cycle every 1 minute. Failure to comply will result in serious equipment damage.

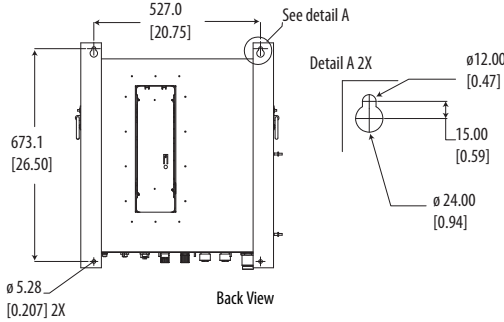
A visual inspection can verify that the breakers are individually opened or closed. For information on how to open the auxiliary circuit breaker door and more details about the circuit breaker reset procedures, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006.



1. 400/480V AC rotary power disconnect
2. 24V DC mechanical brake circuit breaker (shown) or 480V AC source mechanical brake circuit breaker
3. 24V DC control power circuit breaker

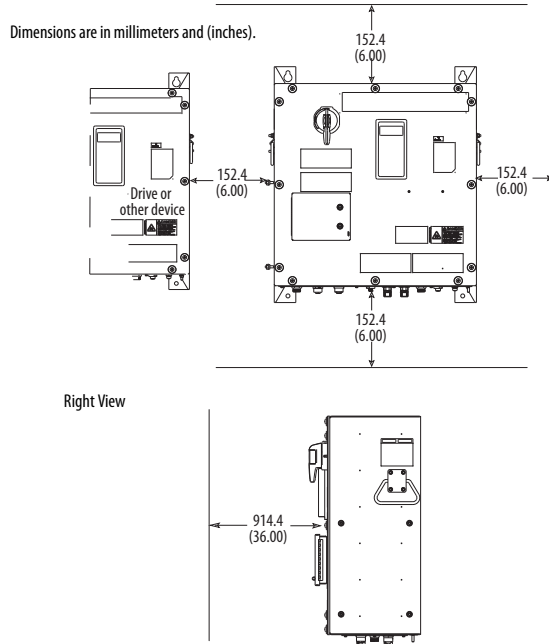
Mount the Drive

For more information on environmental requirements, see [Enclosure Specifications on page 2](#). Dimensions are shown in millimeters and (inches). For more information on mounting the drive, see PowerFlex 755 On-Machine Drive User Manual, publication [750-UM006](#).



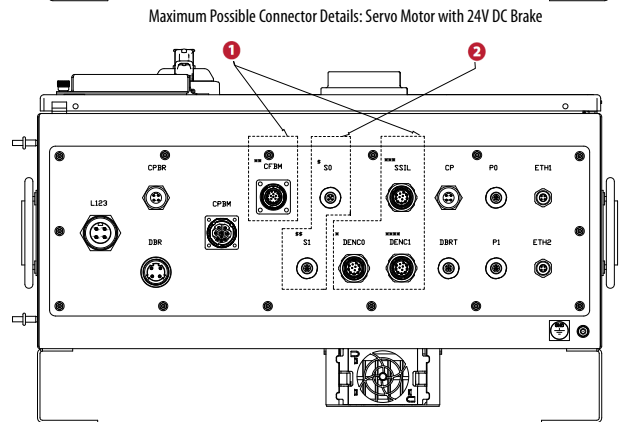
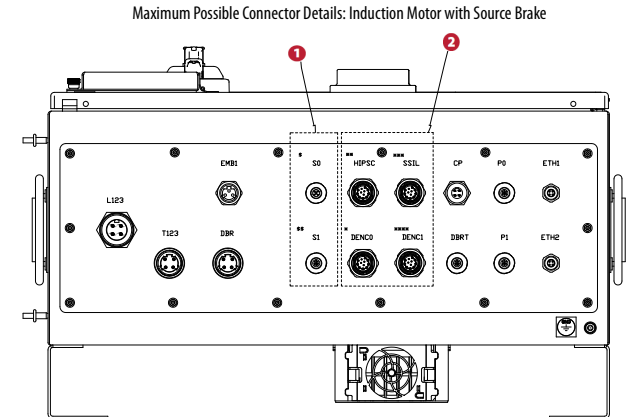
Minimum Mounting Clearances

Be sure that there is adequate clearance for air circulation around the drive. For best air movement, do not mount drives directly above each other. No devices are to be mounted behind the drive. This area must be kept clear of all control and power wiring.



Factory-installed Gland Plate

The On-Machine Drive has a highly configurable gland plate, two of the gland plates that are offered are shown in this section.



The call outs 1 and 2 indicate areas of the gland plate that vary with the different types of safety modules and encoder options that are chosen. For more information on other available configurations, see PowerFlex 755 On-Machine Drive User Manual, publication [750-UM006](#).

On-Machine Drive Gland Plate Abbreviation Definitions

Terminal Designations	Description
L123	Input Power
T123	Output Power
DRB	Dynamic Brake
EMB1	380V...480V AC Source Mechanical Brake
EMB2	24V DC Mechanical Brake
CP	24V DC Control Power
CPBR	24V DC Brake Power
DBRT	Brake Resistor Thermostat Temperature
S0	S0 Network Safety (S3)
S0	S0 Network Safety (S4)
S0	S0 Network Safety (S4 with brake)
S1	S1 Network Safety (S4)

Terminal Designations	Description
CFBM	Allen-Bradley® Servo Bulk Head Hiperface Encoder
CPBM	Allen-Bradley Servo Motor Power and Brake
ENCO	M23 Incremental Encoder
HIPSC	M23 Hiperface SC Encoder
SSIL	M23 SSI Linear Encoder
DENCO	M23 Dual Incremental Encoder - 0
DENC1	M23 Dual Incremental Encoder - 1
SSISC	M23 SSI SC Rotary Encoder
P0	P0 Digital Input
P1	P1 Digital Input
ETH1	EtherNet/IP Link 1
ETH2	EtherNet/IP Link 2

On-Machine Drive Connections

This section explains the different gland plate configurations and what the abbreviations represent on the gland plate. The cables for this unit are supplied by the user but must be mated with the proper connector. For more information on connectors and cables, see PowerFlex 755 On-Machine Drive Specifications, publication [750-TD003](#).

All connections needed to setup the drive, including the EtherNet/IP network connection, are made without removing the front cover. The cover does not need to be removed to bring a drive into service.

Connecting Connectors

This section goes into detail about the design of the connectors and advises installers about having the appropriate connector for the assigned receptacle.

IMPORTANT Many of the connectors could appear to be interchangeable because they have the same mounting hole pattern. Verify your pin out and connectors before attaching to the On-Machine Drive. Review connectors carefully.

The connector groups that follow have similar mounting hole patterns and are interchangeable:

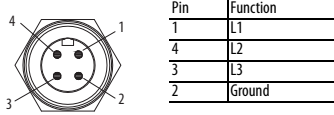
- Encoder CFBM and Power Connector CPBM
- Encoders ENCO, HIPSC, SSIL, DENCO, DENC1, and SSISC
- Power Connectors: L123, T123, DRB, and EMB1
- Control Power Connectors: CP, CPBR, and EMB2
- Safety Connectors: S0 and S1
- Control Power Connector: P0, P1, and DBRT

Receptacle Connections

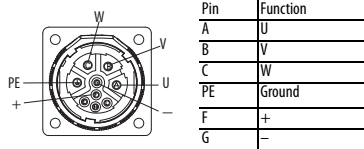
The images that follow are examples of the connectors and are not to scale. For additional information about using the connectors, see [On-Machine Drive Connections on page 5](#).

Power

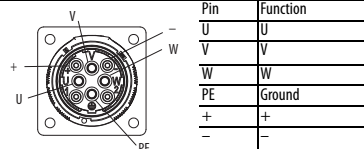
[L123] Input Power, M35



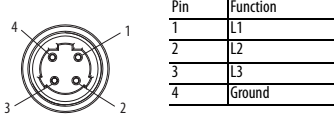
[CPBM] Allen-Bradley Servo Motor (14 amp or less) Power Output (motor connection) and mechanical brake (24V DC)



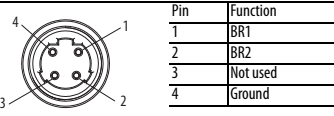
[CPBM] Allen-Bradley Servo Motor (22 amp) Power Output (motor connection) and mechanical brake (24V DC)



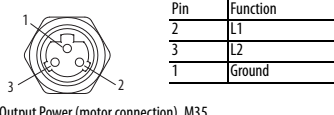
[T123] Output Power (motor connection), M29



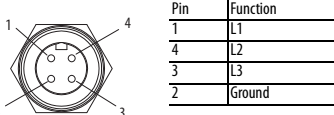
[DBR] Dynamic Brake Resistor, M29



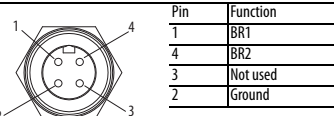
[EMB1] 380...400V AC Source Mechanical Brake, M24



[T123] Output Power (motor connection), M35

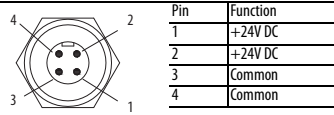


[DBR] Dynamic Brake Resistor, M35

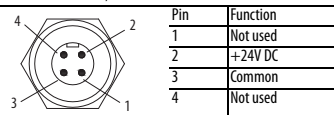


Control Power

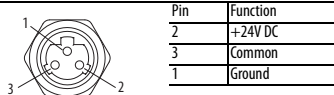
[CP] 24V DC Control Power, Mini male



[CPBR] 24V DC Brake Power, Mini male

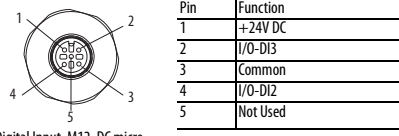


[EMB2] 24V DC Induction Motor Brake Contactor, M24

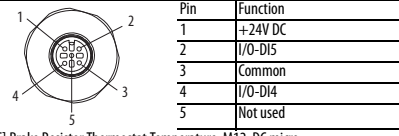


Control Power (cont.)

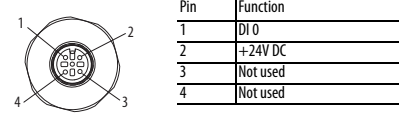
[P0] Digital Input, M12, DC micro



[P1] Digital Input, M12, DC micro

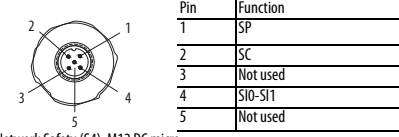


[DBRT] Brake Resistor Thermostat Temperature, M12, DC micro

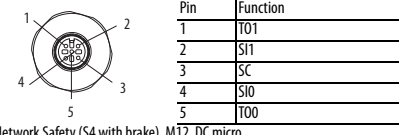


Safety

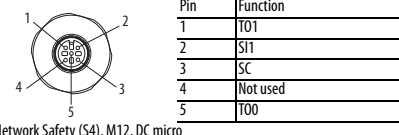
[S0] Network Safety (S3), M12, DC micro



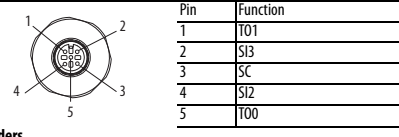
[S0] Network Safety (S4), M12 DC micro



[S0] Network Safety (S4 with brake), M12, DC micro

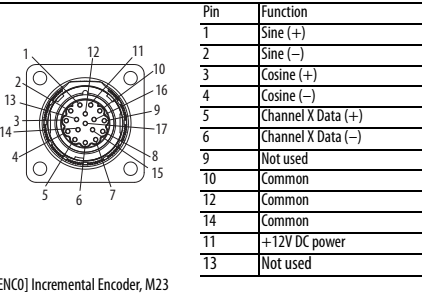


[S1] Network Safety (S4), M12, DC micro

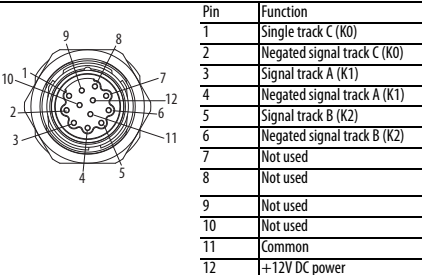


Encoders

[CFBM] Allen-Bradley Servo Bulk Head Hiperface Encoder

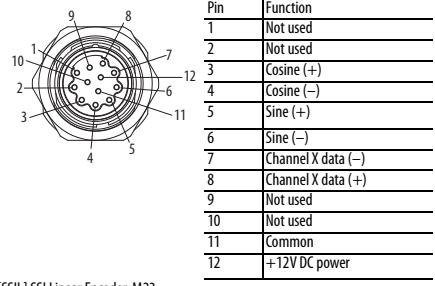


[ENCO] Incremental Encoder, M23

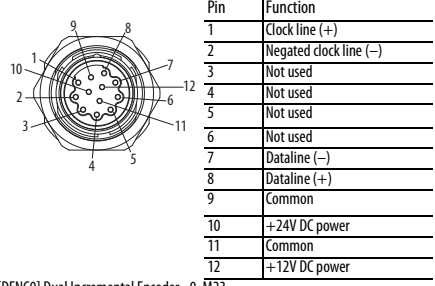


Encoders (cont.)

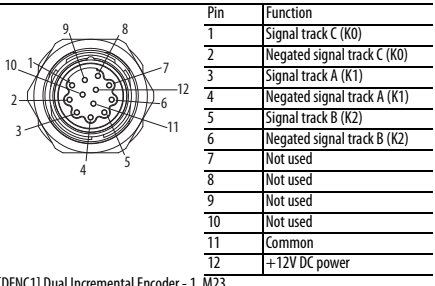
[HIPSC] Hiperface SC Encoder, M23



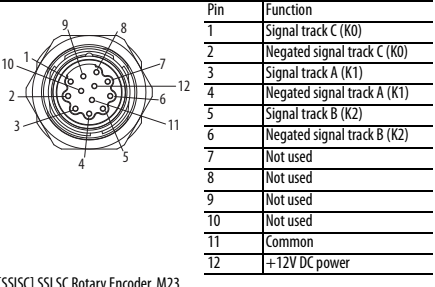
[SSIL] SSI Linear Encoder, M23



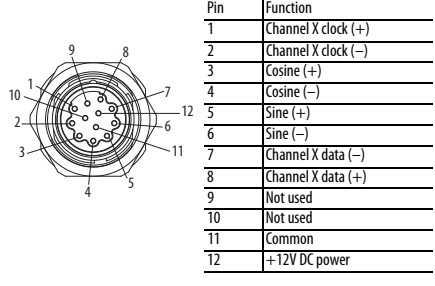
[DENC0] Dual Incremental Encoder - 0, M23



[DENC1] Dual Incremental Encoder - 1, M23

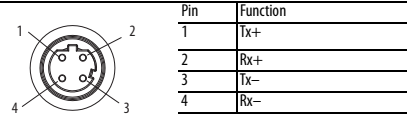


[SSISC] SSI SC Rotary Encoder, M23



Ethernet

[ETH1] and [ETH2] EtherNet/IP, M12, micro D

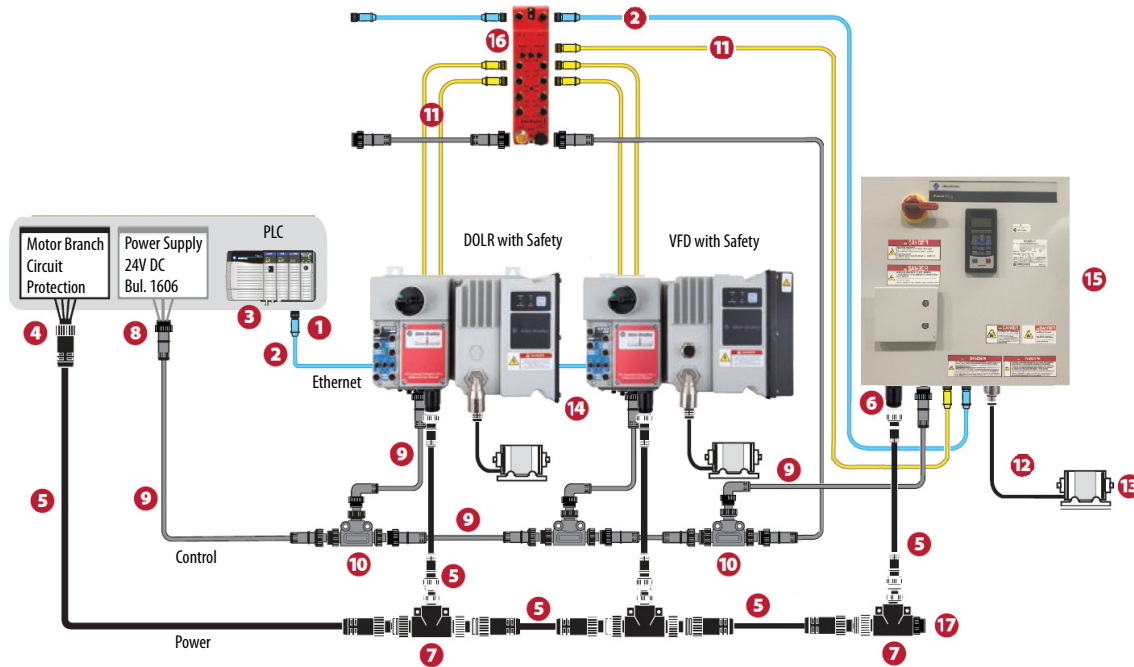


System Configuration Example

This section shows an example configuration of the On-Machine Drive installed with an existing ArmorStart controller that is a hardware-based safety solution. The diagram shows the recommended cables and connectors for one example configuration. For more information on other available configurations, see PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006, or PowerFlex 755 On-Machine Drive Specifications, publication 750-TD003.

IMPORTANT If your On-Machine Drive includes the Safe Torque Off (20-750-S3) or Integrated Safety Functions (20-750-S4) option module, see the respective user manual, listed in the [Additional Resources](#) table, before operating your drive in a safety system.

On-Machine Drive with ArmorStart Power and Control Terminals



No.	Example Cat. No. ⁽¹⁾	Description
1	1585A-*	CAT5e Bulkhead Connector and Receptacle
2	1585D-*	CAT5e Patchcord, IP67, M12 D-Code
3	1585J-*	CAT5e, Patch Cable, IP20, RJ45 to RJ45
4	280-M35F-*	Three-Phase Power Receptacles - Female receptacles are a panel mount connector with flying leads
5	280-PWR35*	Three-Phase Power Trunk-Patchcord cable with integral female or male connector on each end
6	280-M35M*	Three-Phase Power Receptacles - Male receptacles are a panel mount connector with flying leads
7	280-T35	Three-Phase Power Tee connects to one M35 drop line to trunk connectors
8	888N-*	Control Power Receptacles - Female/male receptacles are a panel mount connector with flying leads
9	889N-F4*	Control/Auxiliary Power Media Patchcords – Patchcord cable with integral female or male connector on each end
10	898N-43PB-N4KT	Control/Auxiliary Power Tees - The tee is used with cordset or patchcord to connect several Modified ArmorStart to the same control power source
11	889D-*	Patch cable between Safety I/O module input and ArmorStart connector labeled 'SM' and 'P/M'; this cable provides status and control feedback to the safety system
12	2090-CPBM7E7*	SpeedTec Cable, Motor Power With Brake Wires, SpeedTec DIN Connector, Extension Receptacle (SpeedTec ready) (only for servo motors)
	280-PWRM35* or 280-PWRM29*	Three-Phase Power Patch cord cable with integral female or male connector on each end (only for induction motors)
13	—	Induction motor or Allen-Bradley servo motor
14	—	ArmorStart controller
15	—	On-Machine Drive
16	1732ES-IB8X0BV4 or 1732ES-IB12X0BV2	ArmorBlock® Guard I/O™
17	889A-QCAP	Sealing Cap, Internal Thread

(1) The (*) used in the example catalog numbers, represents variations.

EtherNet/IP Version Embedded Web Server

Out of box, the ETAP tap is configured to be a non-supervisor ring node and will respond to the default IP address of 169.254.1.1. If your application does not require access to the taps diagnostic information or configuration, no further action is required. Otherwise, set the IP address by using RSLinx Classic software, the Studio 5000 Logix Designer application, or a BOOTP or DHCP server. See the Ethernet Tap Product information, publication [1783-PC011](#) for more information on the 1783-ETAP adapter. To access the internal web browser, open your computer's internet browser and enter the IP address of the desired drive (for example, 192.168.1.1). From here, you are able to view parameter settings, device status, and diagnostics from multiple tab views.

IMPORTANT When editing a parameter the default User Name is Administrator and no password. The user should set the password to a unique value for authorized personnel.

Set the PowerFlex 755 Frame 2 IP Address

This section provides instructions and information for setting the parameters to properly configure the embedded EtherNet/IP adapter on the PowerFlex 755 drive. The On-Machine Drive connects to the network through the 1783-ETAP dual-port Ethernet adapter and supports DLR, linear, or star topology using the ETH1 and ETH2 receptacles. The 24V DC control power must be present (via the CP receptacle) to configure the 1783-ETAP dual-port adapter.

IMPORTANT If you use BOOTP or DHCP to set the IP address, only the IP address of the 1783-ETAP module is set. It does not affect the setting for the PowerFlex drive.

Configuring the On-Machine PowerFlex 755 Ethernet IP Adapter

For PowerFlex 755 Embedded Ethernet IP detailed information, see the PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual, publication [750COM-UM001](#). You must use the PowerFlex 20-HIM-C6S HIM to configure the adapters IP address. The embedded EtherNet/IP adapter stores parameters and other information in nonvolatile storage (NVS) memory. Access the adapter using the HIM to view and edit these parameters. After the 1783-ETAP dual-port Ethernet adapter is configured, the following tools can be used to access drive parameters that modify the adapter settings.

Tool	Reference
PowerFlex 20-HIM-C6S HIM	20HIM-UM001
Connected Components Workbench™ software, version 1.02 or later	http://compatibility.rockwellautomation.com/Pages/home.aspx , or online help (installed with the software)
DriveExplorer™ software, version 6.01 or later	http://compatibility.rockwellautomation.com/Pages/home.aspx , or online help (installed with the software)
DriveExecutive™ software, version 5.06 or later	http://compatibility.rockwellautomation.com/Pages/home.aspx , or online help (installed with the software)

Using the PowerFlex 20-HIM-C6S HIM to Access Parameters

Your drive has an enhanced PowerFlex 20-HIM-C6S HIM, and it can be used to access parameters in the adapter. 1. Display the Status screen, which is shown on HIM power-up.

- Use the **4** or **6** key to scroll to the Port in which the embedded EtherNet/IP adapter resides (always Port 13).
- To display the Jump to Parameter # entry popup box, press the **PAR#** soft key.
- Use the numeric keys to enter the desired parameter number, or use the **▲** or **▼** soft key to scroll to the desired parameter number.

For details on how to view and edit parameters, see the PowerFlex 20-HIM-A6/-C6S HIM (human interface module) User Manual, publication [20HIM-UM001](#).

Setting the Adapter IP Address

The PowerFlex 755 On-Machine Drive ships with its adapter thumb-wheel switches factory set to a value of '999'. Based on this setting, **Parameter 36 of Port 13** determines the source of the adapters Ethernet IP address. When the adapter IP address switches are set to a value other than 001...254 or 888, **Parameter 36 - [BOOTP]** determines the source for the adapter node address. By default, the embedded EtherNet/IP adapter on a Frame 2 PowerFlex 755 is configured to set its IP address, subnet mask, and gateway address by using a BOOTP server. The On-Machine Drive cannot use a BOOTP server to set the node address because of the 1783-ETAP dual-port Ethernet adapter, see [Using Adapter Parameters on page 8](#).



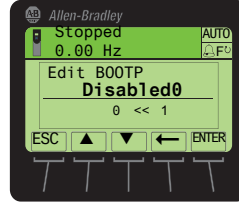
ATTENTION: Do not cycle 400/480V AC power more frequently than one cycle every 1 minute. Failure to comply will result in serious equipment damage.

Using Adapter Parameters

By default, the adapter is configured to use a BOOTP server as the source for the adapter IP address, subnet mask, and gateway address. To use adapter parameters instead, you must first disable BOOTP by using **Parameter 36 - [BOOTP]**. Then set the associated adapter parameters as described in the following subsections.

Disable the BOOTP Feature or Change the Source for the Node Address

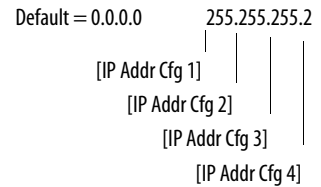
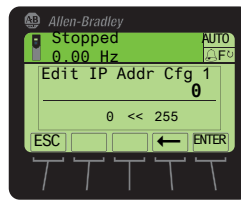
- Set the value of **Parameter 36 - [BOOTP]** to '0' (Disabled).



- Cycle power to the drive to reset the adapter or by using the HIM Reset Device function that is located in the DIAGNOSTIC folder of the drive.
- Set the IP address, subnet mask, and gateway address by using adapter parameters. Perform the steps in the following subsections.

Set the IP Address

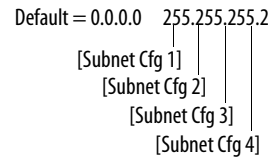
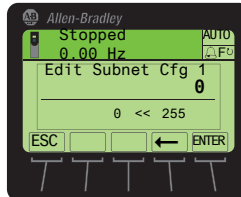
- Verify **Parameter 36 - [BOOTP]** is set to '0' (Disabled).
- Set the value of **Parameters 38 - [IP Addr Cfg 1]** through **41 - [IP Addr Cfg 4]** to a unique IP address.



- Cycle power to the drive to reset the adapter or by using the Reset Device function of the HIM, located in the DIAGNOSTIC folder for the drive.
 - The ENET status indicator is steady green or updates green if the IP address is correctly configured.

Set the Subnet Mask

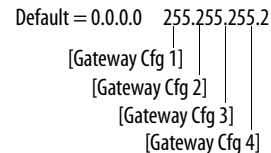
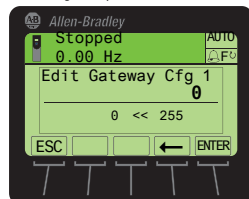
- Verify **Parameter 36 - [BOOTP]** is set to '0' (Disabled).
- Set the value of **Parameters 42 - [Subnet Cfg 1] ... Parameter 45 - [Subnet Cfg 4]** to the desired value for the subnet mask.



- Cycle power to the drive to reset the adapter or by using the Reset Device function of the HIM located in the DIAGNOSTIC folder for the drive.

Set the Gateway Address

- Verify **Parameter 36 - [BOOTP]** is set to '0' (Disabled).
- Set the value of **Parameters 46 - [Gateway Cfg 1] ... Parameter 49 - [Gateway Cfg 4]** to the IP address of the gateway device.



- Cycle power to the drive to reset the adapter or by using the HIM Reset Device function that is located in the DIAGNOSTIC folder of the drive.

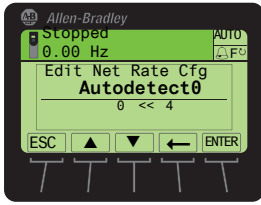
Setting the Data Rate

By default, the adapter is set to autodetect, so it automatically detects the data rate and duplex setting that is used on the network.

If you must set a specific data rate and duplex setting, use the **Parameter 50 - [Net Rate Cfg]** value.

This value determines the Ethernet data rate and duplex setting that the adapter uses to communicate.

1. Set the value of **Parameter 50 - [Net Rate Cfg]** to the data rate at which your network is operating.



Value	Data Rate
0	Autodetect (default)
1	10 Mbps Full
2	10-Mbps Half
3	100 Mbps Full
4	100-Mbps Half

IMPORTANT Auto detection of communication rate and duplex works only if the device (usually a switch) on the other end of the cable is also set to detect the baud rate/duplex. If one device has the baud rate/duplex hard-coded, the other device must be hard-coded to the same settings.

2. Cycle power to the drive to reset the adapter or by using the Reset Device function of the HIM located in the DIAGNOSTIC folder for the drive.

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
PowerFlex 750-Series AC Drives Technical Data, publication 750-TD001	Provides detailed information on: <ul style="list-style-type: none"> • Drive specifications • Option specifications • Fuse and circuit breaker ratings
PowerFlex 755 On-Machine Drive User Manual, publication 750-UM006	These publications provide detailed information on how to install, configure, and operate the PowerFlex 755 On-Machine Drive.
PowerFlex 755 On-Machine Drive Specifications, publication 750-TD003	
Bulletin 140G Flexible Cable Oper Mech-140G-G, 140G-H, 140G-I, 140G-J, 140G-K, publication 140G-IN128	Installation instruction for Flex Cable Operator for 140G-G...140G-K.
PowerFlex 7-Class Enhanced Remote HIM, publication 20HIM-IN005	Provides dimensions and installation instructions for a 20HIM.
PowerFlex 750-Series Fan Replacement Kits, publication RA-IN027	Provides instructions on replacing a PowerFlex 750-Series fan kit.
1321-M055 Common Mode Choke, publication 1321-IN002	Provides instruction on replacing a common mode choke in a PowerFlex 750-Series frame 1...7.
PowerFlex 750-Series AC Drives Installation Instructions, publication 750-IN001	This document explains the basic steps for mechanical installation and for connecting incoming power, the motor, and basic I/O to the PowerFlex 750-Series Adjustable Frequency AC drive.
Industrial Automation Wiring and Grounding Guidelines, 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
PowerFlex 750-Series Drive Programming Manual, 750-PM001	Provides detailed information on: <ul style="list-style-type: none"> • I/O, control, and feedback options • Parameters and programming • Faults, alarms, and troubleshooting
PowerFlex 20-HIM-A6/-C6S HIM (Human Interface Module) User Manual, publication 20HIM-UM001	Provides detailed information on HIM components, operation, and features.
PowerFlex 755/755T Integrated Safety Functions Option Module, publication 750-UM005	These publications provide detailed information on how to install, configure, and operate the 750-Series safety option modules.
PowerFlex 755/755T Integrated Safety - Safe Torque Off Option Module, publication 750-UM004	
Preventive Maintenance Checklist of Industrial Control and Drive System Equipment, publication DRIVES-TD001	Provides preventative maintenance checklists and recommendations for PowerFlex drives.
PowerFlex 755 Drive Embedded EtherNet/IP Adapter User Manual, publication 750-UM001	Provides detailed information on setting the IP address using the 1783-ETAP.
Ethernet Tap, publication 1783-PC011	
Product Certifications website, http://rok.auto/certifications	Provides declarations of conformity, certificates, and other certification details.
Connected Components Workbench website http://www.ab.com/support/abdrives/webupdate/software.html , and online help ⁽¹⁾	The Connected Components Workbench software tool. Includes a link for free software download.
Product Compatibility Download Center https://compatibility.rockwellautomation.com/Pages/home.aspx	The Product Compatibility and Download Center (PCDC) can help you find product-related downloads including firmware, release notes, associated software, drivers, tools, and utilities.

(1) The online help is installed with the software.

You can view or download publications at <http://www.rockwellautomation.com/global/literature-library/overview.page>.

Rockwell Automation Support

Use the following resources to access support information.

Technical Support Center	Knowledgebase Articles, How-to Videos, FAQs, Chat, User Forums, and Product Notification Updates.	https://rockwellautomation.custhelp.com/
Local Technical Support Phone Numbers	Locate the phone number for your country.	http://www.rockwellautomation.com/global/support/get-support-now.page
Direct Dial Codes	Find the Direct Dial Code for your product. Use the code to route your call directly to a technical support engineer.	http://www.rockwellautomation.com/global/support/direct-dial.page
Literature Library	Installation Instructions, Manuals, Brochures, and Technical Data.	http://www.rockwellautomation.com/global/literature-library/overview.page
Product Compatibility and Download Center (PCDC)	Get help determining how products interact, check features and capabilities, and find associated firmware.	http://www.rockwellautomation.com/global/support/pcdc.page

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete the How Are We Doing? form at http://literature.rockwellautomation.com/idc/groups/literature/documents/du/ra-du002_-en-e.pdf.



At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

Allen-Bradley, ArmorBlock, ArmorStart, Connected Components Workbench, DriveExecutive, DriveExplorer, On-Machine, PowerFlex, Rockwell Automation, RSLinx, RSLogix 5000, and Studio 5000 Logix Designer are trademarks of Rockwell Automation, Inc.

Trademarks not belonging to Rockwell Automation are property of their respective companies.

EtherNet/IP is a trademark of ODVA, Inc

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846



PN-562897

Publication 750-PC004C-EN-P - December 2019

Supersedes Publication 750-PC004B-EN-P April 2019

Copyright © 2019 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.