

(de) Spezialdokumentation UL
(en) Special documentation UL
(zh) UL 专项文献

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Hinweis

In Verbindung mit dem UL-Kennzeichen auf dem Produkt gelten die englischsprachigen Informationen dieses Dokuments zur Einhaltung der Zertifizierungsbedingungen von Underwriters Laboratories Inc. (UL) für USA und Kanada.

Umbau oder Erweiterung des Produkts mit Modulen, für die das Recognized Component Mark von UL nicht gilt, führt zum Verlust der UL-Zertifizierung.

- Setzen Sie sich mit Festo in Verbindung, wenn Sie Informationen über UL-zertifizierte Module benötigen.

Technische Daten zum Produkt können in anderen Dokumenten abweichende Werte aufweisen. Für die UL-zertifizierten Produkte gelten stets vorrangig die abweichenden Technischen Daten des vorliegenden Dokuments.

Die umfassende Dokumentation zum Produkt erhalten Sie bei Festo oder unter www.festo.com im Internet.

Die UL-Zertifizierung bezieht sich üblicherweise auf das Produkt als Komponente und nicht auf dessen Installation oder die Benutzung des Produktes in einer Maschine/Anlage.

- Berücksichtigen Sie bei Installation und Betrieb dieses Produktes alle dafür geltenden Sicherheitsanforderungen, Gesetze, Regelungen, Codes, Normen und Standards, beispielsweise National Electrical Code (USA), Canadian Electrical Code (Kanada), Vorschriften der US-amerikanischen Bundesbehörde OSHA.

Note

In conjunction with the UL certification on the product, the information in English in this document applies for fulfilling the certification conditions of Underwriters Laboratories Inc. (UL) for USA and Canada.

Conversion or extension of the product with modules, for which the Recognized Component Mark of UL does not apply, will lead to loss of the UL certification.

- Contact Festo if you require information on UL-certified modules.

Technical specifications on the product may show different values in other documents. In the case of UL-certified products, the differing technical specifications in this documentation always apply first.

Detailed documentation on the product can be obtained from Festo or under www.festo.com in the Internet.

The UL-certification usually refers to the product as a component and not to its installation or to the use of the product in a machine/system.

- When installing and operating this product, take into account all applicable safety requirements, legislation, regulations and standards, for example the National Electrical Code (USA), Canadian Electrical Code (Canada), the regulations of the US American Federal Authority OSHA.

注意

结合产品上的 UL 标识, 本文件信息 (英文版) 遵循美国和加拿大的美华认证有限公司 (UL) 的认证条件。

若在产品改造或扩展过程中使用了不具有 UL 认可元件标识 (Recognized Component Mark) 的模块, 则整个产品将失去 UL 认证。

- 如果您需要了解哪些模块已具有 UL 认证, 请与 Festo 联系。

产品的技术数据在其他文件中可能存在差异。对于 UL 认证的产品, 总是优先使用本文件中所给出的技术数据。

您可以登录 www.festo.com 下载完整的产品文件。

UL 认证通常只针对产品本身, 而不涉及该产品在机器/设备中的安装或使用。

- 在安装和运行这些产品时, 请考虑适用的所有安全要求、法规、规定、规程、规范和标准, 例如: (美国) 国家电气规范、(加拿大) 电气规范和美国职业安全与健康管理局 (OSHA) 规定。

Terminal CPX, Valve terminal MPA, Sub-base valve VMPA...-M1H

This product is recognized by Underwriters Laboratories Inc. (UL). Representative samples of this component have been evaluated by UL and meet applicable UL requirements.

UL approval information		
	CPX	MPA, VMPA...-M1H
Product category code	NRAQ2 (USA), NRAQ8 (Canada)	YIOZ2 (USA), YIOZ8 (Canada)
File number	E239998	MH19482
Considered standards	UL 508, C22.2 No. 142	UL 429, C22.2 No 139
UL mark		

Note

Fitting and commissioning to be carried out by qualified personnel only in accordance with the operating instructions. Qualified trained personnel must have several years of experience in installing and commissioning electrical and pneumatic industrial control systems.

- Please observe the applicable safety requirements and standards.

Extracts)* from the UL report:

Only for connection to a NEC Class 2 supply Raccorder Uniquement a un circuit de Classe 2

This device is intended to be used with a Class 2 power source or Class 2 transformer in accordance with UL1310 or UL1585 (see fig. 1).

As an alternative a LV/C (Limited Voltage/Current) power source with one of the following properties can be used:

- This device shall be used with a suitable isolating source such that the maximum open circuit voltage potential available to the product is not more than 24 V DC and the current is limited to a value not exceeding 8 amperes measured after 1 minute of operation (see fig. 1).
- This device shall be used with a suitable isolating source in conjunction with a fuse in accordance with UL248. The fuse shall be rated max. 4 A and be installed in the 24 V DC power supply to the device in order to limit the available current (see fig. 2).

Note that, when more than one power supply or isolating device is used, connection in parallel is not permitted.

Conditions of acceptability (only series CPX)

In determining the acceptability of the combination, the following details should be examined:

- The mounting suitability shall be determined in the end-use.
- Devices should be used within its recognized ratings as specified above.
- The device has not been investigated for field-wiring. The suitability should be determined in the end-use application.
- If the device is provided with output wires which are not UL listed or recognized these wires have to be segregated from field and factory installed conductors and uninsulated live parts of other circuits operating at over 150 V to ground so that a minimum permanent 2 inch (50.8 mm) separation is maintained, unless the field and factory wiring conductors have been provided with recognized insulating material which has an equal or higher voltage rating than the other circuit involved.

Conditions of acceptability (only series MPA, VMPA...-M1H)

Technical data	
Fluids	Air or inert gas
Maximum Body Pressure	
- External	10 bar (1.0 MPa, 145 psi)
- Internal (pilot air)	8 bar (0.8 MPa, 116 psi)
Maximum Operating Pressure Differential	-0.9 ... 10 bar (-0.09 ... 1.0 MPa, -13.1 ... 145 psi)
Maximum Fluid Temperature / ambient	-5 °C ... +50 °C (+23 ... +122 °F)
Electrical (for each separate manifold valve)	See "MPA pneumatics manual", P.BE-MPA...

In determining the acceptability of this device in the end-use, the following shall be determined:

- The valve and valve terminals must be provided with a suitable electrical enclosure in accordance with the end-use standard.
- The supply terminals are not suitable for field-wiring purposes.
- The suitability of any mating connector must be determined in the end product.
- These valves have been investigated only for fluid or vacuum (separate pilot air) with a flow of compressed air.
- This valve is intended to be connected to a NEC Class 2 electrical supply only. Use of multiple Class 2 supplies is not to result in electrical inter-connection at any point within the valve-system circuitry.
- This valve is intended to be used in conjunction with air tubes with following outside dimensions:

Port	Series MPA			
	Air tube [mm]	[inch]	Size thread	Torque [Nm]
1	8 or 10	5/16 or 3/8	G1/4	6
2 or 4	4 or 6	3/16 or 1/4	M7	2
	6 or 8	1/4 or 5/16	G1/8	3
3 (optional)	10	5/16	press-fitted	---
12 or 14 (optional)	6	3/16 or 1/4	M7	2
82, 84 (optional)	6	3/16 or 1/4	M7	2

Port	Series VMPA1...-IC...		Series VMPA2...-IC...	
	Size thread	Torque [Nm]	Size thread	Torque [Nm]
1	M7	2	G1/8	3
2	M7	2	G1/8	3
3	M7	2	G1/8	3
4	M7	2	G1/8	3
5	M7	2	G1/8	3
12/14	M5	0.80	M5	0.80
82/84	M5	0.80	M5	0.80
L	M5	0.80	M5	0.80

*) taken over essentially without important changes

- Torque tests were performed according ISO 16030, Pneumatic Fluid Power – Connections – Ports and Stud Ends, first Edition dated December 15, 2001, Table 3. Values are specified in the table above.
- The Low Temperature Impact Test was not performed. In the end-product application the valve shall be suitably guarded or protected from impact.
- The suitability of the device when used in end-use product that exceeds the device ratings must be investigated in the end product. These coils were tested in a nominal ambient of 50 °C. If the end use application is greater than this ambient, or in a confined enclosure, temperatures of the coil windings and encapsulant should be monitored in the end-product by the Change of Resistance Method to ensure the temperatures do not exceed Class A (105 °C) limits.
- These valves are intended to be used on a regulated pressure system with the maximum ratings as noted under "Technical data".

Formation of power zones

The modular power supply concept facilitates the formation of electrically isolated power zones. Basic information on the power supply concept can be found in the CPX system manual (P.BE-CPX-SYS...).

Warning

Short circuits can cause damage. Please note the following:

- The maximum permissible current per pin at the supply modules is 4 A.
- With the 4-pin system supply modules (M18), the sum of both currents of the operating and load voltages flows via pin "0 V".

- Please note the following:
- The operating voltage for the internal electronics and the sensor supply is only supplied via the system supply, type CPX-GE-EV-S (must be provided exactly once for each CPX terminal).
 - The current consumption for the internal electronics (internal current consumption of the modules) and the sensor supply must not exceed the maximum permissible current consumption of 4 A.
 - The current consumption of the additional supply must also not exceed the maximum permissible current consumption of 4 A per circuit.
 - Tables for calculation the current consumption of the system and additional supply can be found in the CPX system manual.
 - The current consumption of the modules can be found in the technical data in the relevant product documentation.

Connection examples

The figures below show connection examples when using system and additional supply modules for electric outputs.

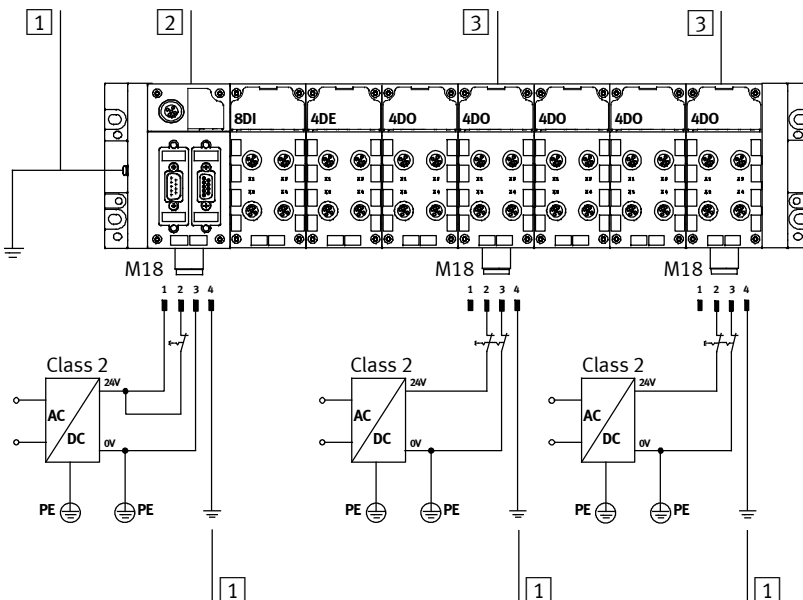


Fig. 1: Connection example for Terminal CPX; additional supply modules with separate circuits (Class 2 Circuits).

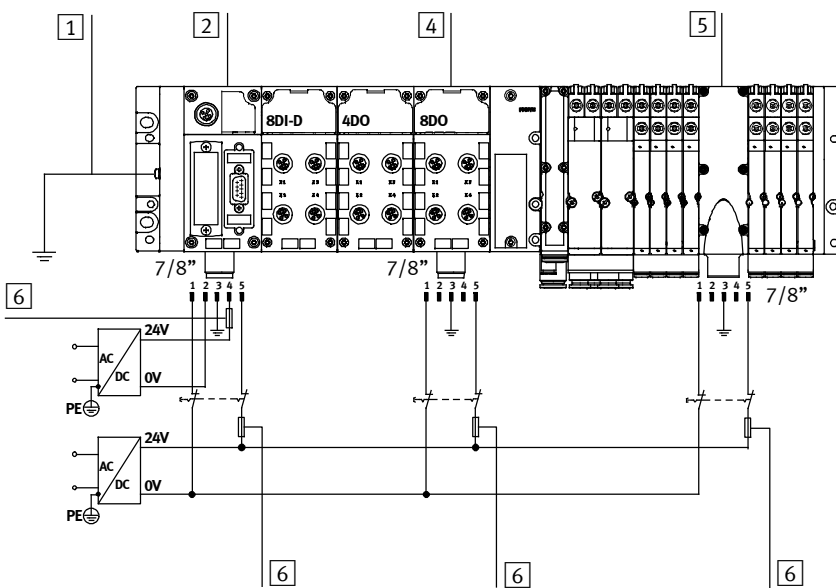
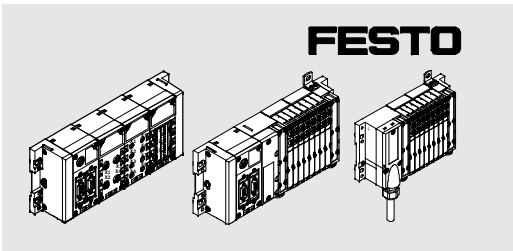


Fig. 2: Connection example for Terminal CPX with valve terminal MPA; additional supply modules with electrically isolated circuits and a maximum permissible current consumption of 4 A (with an external fuse) per circuit/pin.

- 1 Potential equalization
- 2 Interlinking block with system supply, type CPX-(M)-GE-EV-S...
- 3 Interlinking block with additional supply for outputs, type CPX-(M)-GE-EV-Z...
- 4 Interlinking block with additional supply for valves, type CPX-GE-EV-V
- 5 Supply plate, electrical, with additional supply for valves, type VMPA-FB-SP...-V...
- 6 Fuse (max. 4 A)



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Importante

En relación con el marcado UL en el producto es válida la información en inglés de este documento respecto al cumplimiento de las condiciones de certificación de Underwriters Laboratories Inc. (UL) para Estados Unidos y Canadá.

Cualquier modificación o ampliación del producto con módulos para los que no sea válida la Recognized Component Mark de UL, conlleva la pérdida de la certificación UL.

- Si necesita información sobre los módulos con certificación UL póngase en contacto con Festo.

Las especificaciones técnicas del producto pueden mostrar valores diferentes en otros documentos. Para los productos con certificación UL siempre son válidas prioritariamente las especificaciones técnicas diferentes indicadas en el presente documento.

Puede obtenerse documentación detallada sobre este producto de Festo en la dirección de Internet www.festo.com.

La certificación UL se aplica usualmente al producto como componente y no a su instalación o a la utilización del producto en una máquina o sistema.

- Cuando se instala y se hace funcionar el producto, tener en cuenta los requerimientos de seguridad aplicables, legislación, normas y estándares, por ejemplo la National Electrical Code (USA), Canadian Electrical Code (Canadá), las normas de la US American Federal Authority OSHA.

Nota

Les informations en anglais contenues dans ce document, associées au marquage UL figurant sur le produit, s'appliquent aux Etats-Unis et au Canada en vue du respect des conditions de certification de Underwriters Laboratories Inc. (UL).

La transformation ou l'extension du produit à l'aide de modules pour lesquels la Recognized Component Mark de UL ne s'applique pas entraîne la perte de la certification UL.

- Veuillez prendre contact avec Festo si vous désirez de plus amples informations concernant les modules certifiés UL.

Les caractéristiques du produit peuvent varier d'un document à l'autre. Les caractéristiques techniques divergentes du présent document s'appliquent toujours en priorité pour les produits certifiés UL.

La documentation complète concernant le produit est disponible auprès de Festo ou sur Internet à l'adresse www.festo.com.

La certification UL concerne habituellement le produit en tant que composant et non son installation ou l'utilisation du produit dans une machine / installation.

- Lors de l'installation et du fonctionnement de ce produit, respecter toutes les consignes de sécurité, lois, réglementations, codes, normes et références, comme par exemple National Electrical Code (USA), Canadian Electrical Code (Canada), directives de l'autorité fédérale des Etats-Unis OSHA.

Nota

Unitamente al marchio UL sul prodotto sono valide le informazioni in inglese di questo documento per l'osservanza delle condizioni di certificazione Underwriters Laboratories Inc. (UL) per USA e Canada.

Le modifiche o trasformazioni del prodotto con moduli per i quali non è valido il Recognized Component Mark di UL comportano la perdita della certificazione.

- Contattare Festo in caso siano necessarie delle informazioni sui moduli certificati UL.

In altri documenti, le specifiche tecniche relative al prodotto possono presentare valori diversi rispetto al presente documento. Per i prodotti certificati UL sono validi soprattutto i dati tecnici differenti riportati nel presente documento.

La documentazione particolareggiata sul prodotto può essere richiesta alla Festo o è disponibile all'indirizzo www.festo.com su Internet.

In genere la certificazione UL si riferisce al prodotto come componente e non all'installazione o all'impiego in una macchina/impianto.

- Per l'installazione e l'esercizio di questo prodotto tenere presente i requisiti di sicurezza, leggi, regolamenti, codici, norme e standard, ad esempio il National Electrical Code (USA), il Canadian Electrical Code (Canada), le prescrizioni dell'Autorità Federale Statunitense OSHA.

Terminal CPX, Valve terminal MPA, Sub-base valve VMPA...-M1H

This product is recognized by Underwriters Laboratories Inc. (UL). Representative samples of this component have been evaluated by UL and meet applicable UL requirements.

UL approval information	CPX	MPA, VMPA...-M1H
Product category code	NRAQ2 (USA), NRAQ8 (Canada)	YIOZ2 (USA), YIOZ8 (Canada)
File number	E239998	MH19482
Considered standards	UL 508, C22.2 No. 142	UL 429, C22.2 No 139
UL mark		

Note

Fitting and commissioning to be carried out by qualified personnel only in accordance with the operating instructions. Qualified trained personnel must have several years of experience in installing and commissioning electrical and pneumatic industrial control systems.

- Please observe the applicable safety requirements and standards.

Extracts)* from the UL report:

Only for connection to a NEC Class 2 supply
Raccorder Uniquement a un circuit de Classe 2

This device is intended to be used with a Class 2 power source or Class 2 transformer in accordance with UL1310 or UL1585 (see fig. 1).

As an alternative a LV/C (Limited Voltage/Current) power source with one of the following properties can be used:

- This device shall be used with a suitable isolating source such that the maximum open circuit voltage potential available to the product is not more than 24 V DC and the current is limited to a value not exceeding 8 amperes measured after 1 minute of operation (see fig. 1).
- This device shall be used with a suitable isolating source in conjunction with a fuse in accordance with UL248. The fuse shall be rated max. 4 A and be installed in the 24 V DC power supply to the device in order to limit the available current (see fig. 2).

Note that, when more than one power supply or isolating device is used, connection in parallel is not permitted.

Conditions of acceptability (only series CPX)

In determining the acceptability of the combination, the following details should be examined:

- The mounting suitability shall be determined in the end-use.
- Devices should be used within its recognized ratings as specified above.
- The device has not been investigated for field-wiring. The suitability should be determined in the end-use application.
- If the device is provided with output wires which are not UL listed or recognized these wires have to be segregated from field and factory installed conductors and uninsulated live parts of other circuits operating at over 150 V to ground so that a minimum permanent 2 inch (50.8 mm) separation is maintained, unless the field and factory wiring conductors have been provided with recognized insulating material which has an equal or higher voltage rating than the other circuit involved.

Conditions of acceptability (only series MPA, VMPA...-M1H)

Technical data	
Fluids	Air or inert gas
Maximum Body Pressure	
- External	10 bar (1.0 MPa, 145 psi)
- Internal (pilot air)	8 bar (0.8 MPa, 116 psi)
Maximum Operating Pressure Differential	-0.9 ... 10 bar (-0.09 ... 1.0 MPa, -13.1 ... 145 psi)
Maximum Fluid Temperature / ambient	-5 °C ... +50 °C (+23 ... +122 °F)
Electrical (for each separate manifold valve)	See "MPA pneumatics manual", P.BE-MPA...

In determining the acceptability of this device in the end-use, the following shall be determined:

- The valve and valve terminals must be provided with a suitable electrical enclosure in accordance with the end-use standard.
- The supply terminals are not suitable for field-wiring purposes.
- The suitability of any mating connector must be determined in the end product.
- These valves have been investigated only for fluid or vacuum (separate pilot air) with a flow of compressed air.
- This valve is intended to be connected to a NEC Class 2 electrical supply only. Use of multiple Class 2 supplies is not to result in electrical inter-connection at any point within the valve-system circuitry.
- This valve is intended to be used in conjunction with air tubes with following outside dimensions:

Port	Series MPA			
	Air tube [mm]	[inch]	Size thread	Torque [Nm]
1	8 or 10	5/16 or 3/8	G1/4	6
2 or 4	4 or 6	3/16 or 1/4	M7	2
	6 or 8	1/4 or 5/16	G1/8	3
3 (optional)	10	5/16	press-fitted	---
12 or 14 (optional)	6	3/16 or 1/4	M7	2
82, 84 (optional)	6	3/16 or 1/4	M7	2

Port	Series VMPA1...-IC...		Series VMPA2...-IC...	
	Size thread	Torque [Nm]	Size thread	Torque [Nm]
1	M7	2	G1/8	3
2	M7	2	G1/8	3
3	M7	2	G1/8	3
4	M7	2	G1/8	3
5	M7	2	G1/8	3
12/14	M5	0.80	M5	0.80
82/84	M5	0.80	M5	0.80
L	M5	0.80	M5	0.80

*) taken over essentially without important changes

- Torque tests were performed according ISO 16030, Pneumatic Fluid Power – Connections – Ports and Stud Ends, first Edition dated December 15, 2001, Table 3. Values are specified in the table above.
- The Low Temperature Impact Test was not performed. In the end-product application the valve shall be suitably guarded or protected from impact.
- The suitability of the device when used in end-use product that exceeds the device ratings must be investigated in the end product. These coils were tested in a nominal ambient of 50 °C. If the end use application is greater than this ambient, or in a confined enclosure, temperatures of the coil windings and encapsulant should be monitored in the end-product by the Change of Resistance Method to ensure the temperatures do not exceed Class A (105 °C) limits.
- These valves are intended to be used on a regulated pressure system with the maximum ratings as noted under "Technical data".

Formation of power zones

The modular power supply concept facilitates the formation of electrically isolated power zones. Basic information on the power supply concept can be found in the CPX system manual (P.BE-CPX-SYS...).

Warning

Short circuits can cause damage. Please note the following:

- The maximum permissible current per pin at the supply modules is 4 A.
- With the 4-pin system supply modules (M18), the sum of both currents of the operating and load voltages flows via pin "0 V".

Please note the following:

- The operating voltage for the internal electronics and the sensor supply is only supplied via the system supply, type CPX-GE-EV-S (must be provided exactly once for each CPX terminal).
- The current consumption for the internal electronics (internal current consumption of the modules) and the sensor supply must not exceed the maximum permissible current consumption of 4 A.
- The current consumption of the additional supply must also not exceed the maximum permissible current consumption of 4 A per circuit.
- Tables for calculation the current consumption of the system and additional supply can be found in the CPX system manual.
- The current consumption of the modules can be found in the technical data in the relevant product documentation.

Connection examples

The figures below show connection examples when using system and additional supply modules for electric outputs.

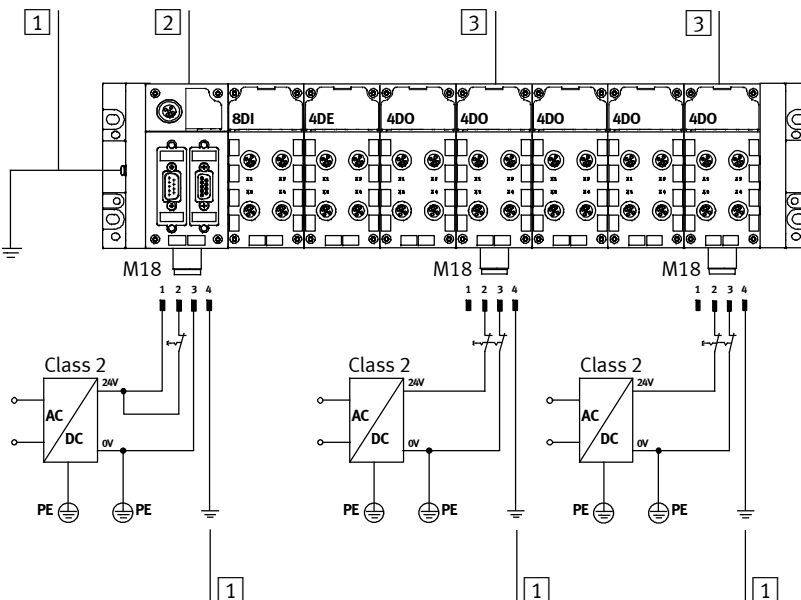


Fig. 1: Connection example for Terminal CPX; additional supply modules with separate circuits (Class 2 Circuits).

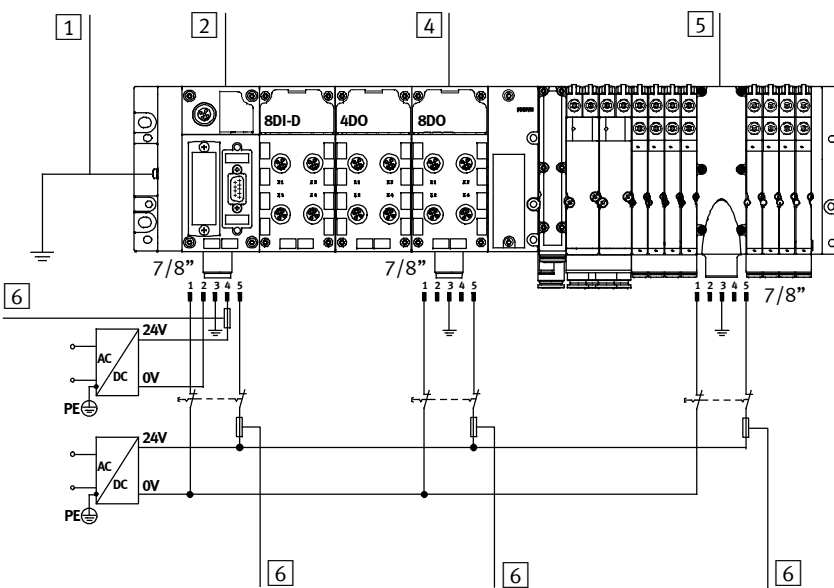


Fig. 2: Connection example for Terminal CPX with valve terminal MPA; additional supply modules with electrically isolated circuits and a maximum permissible current consumption of 4 A (with an external fuse) per circuit/pin.

- 1 Potential equalization
- 2 Interlinking block with system supply, type CPX-(M)-GE-EV-S...
- 3 Interlinking block with additional supply for outputs, type CPX-(M)-GE-EV-Z...
- 4 Interlinking block with additional supply for valves, type CPX-GE-EV-V
- 5 Supply plate, electrical, with additional supply for valves, type VMPA-FB-SP...-V...
- 6 Fuse (max. 4 A)