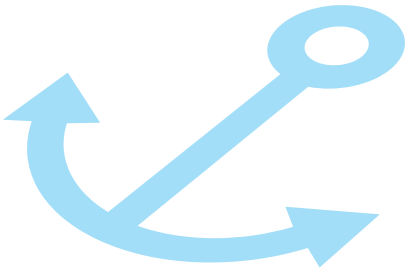
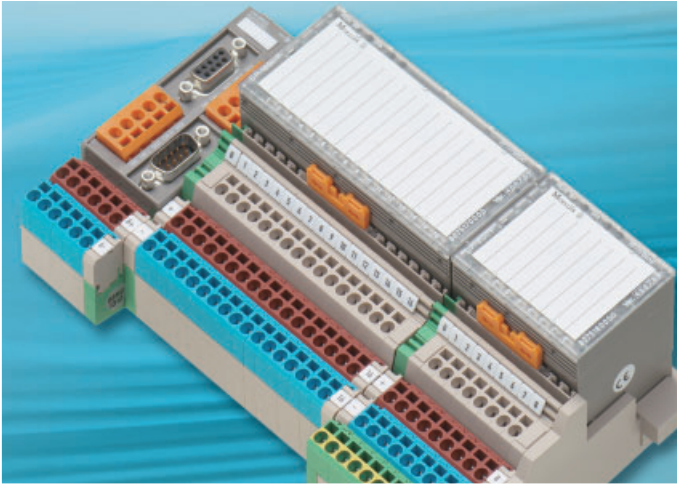
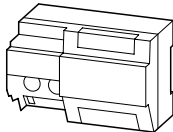


Approvals for world markets



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The NA and CNA devices have the same dimensions as those for the German market.



The standard versions of most Moeller devices are approved for use throughout the world, including the USA and Canada. As such, they can be used without restriction as devices for world markets.

The standard versions of some devices, such as circuit-breakers, can be used worldwide except in the USA and Canada. Such devices are available in special UL- and CSA-approved versions for export to these countries.

Moeller low-voltage switchgear and switchgear assemblies conform to national and international specifications, making it possible to construct control systems that will conform to the national international specifications of any country in the world. This, of course, means that due consideration must be given to the particular national standards of the country in question, such as those concerning installation, operation, installation materials and methods, as well as any pertaining to circumstances such as severe environmental conditions. The component rating data for 220 – 240 V, 380 – 440 V, 500 V, 600 V and 690 V given in this catalogue cover virtually all existing three-phase systems worldwide.

Ratings are also given for the supply voltages in common use in the USA and in Canada.

In addition to the widely differing system conditions, special installation standards and approval requirements also have to be observed for the worldwide use of switchgear:

Where screw fuses have to be used in a control system, some European countries – such as Denmark, Finland, the Netherlands, Norway and Sweden – require gauge screws. In this case, "FORM P" fuse bases must be used. Switzerland no longer requires the use of gauge screws, but they are often still requested by customers.

The majority of countries permit the import of switchgear assemblies and devices on the manufacturer's undertaking that they have been constructed in accordance with the pertinent specifications. In some countries, such as the USA and Canada, however, there is a legal obligation to obtain official approval. In these countries, devices and enclosures – sometimes even complete control systems – are tested and approved by independent bodies.

To a certain extent, there also used to be a legal obligation to obtain official approval for low-voltage switchgear and controlgear in Scandinavia and in Switzerland. For industrial switchgear, this legal obligation has now been abolished, provided the devices have been manufactured and tested in accordance with harmonized European standards (such as IEC/EN 60947). There is then no longer a requirement for them to carry their country's own approval mark. Moeller develops switchgear to international standards, such as IEC/EN 60947 and applies the corresponding marks.

Since January 1997, all devices must conform to the European Low-Voltage Directive and, where intended for sale within the European Union, must carry the CE mark.

Europe
Conformité Européen
(CE)



This mark denotes that the device carrying it conforms to all relevant requirements and specifications. The mandatory application of this mark therefore enables the unrestricted use of marked devices within the European economic area.

Since January 1996, all devices sold within the European union must comply with the Electromagnetic Compatibility (EMC) Directive. Moeller has passed the required tests for all products subject to these Directives, and the devices carry the CE mark, demonstrating compliance with the EMC Directive. Because devices bearing the CE mark comply with the harmonized standards, approval and the associated marking is no longer required in the following countries:

Belgium
Comité Electro-
technique Belge
Belgisch Elektro-
technisch Comité
(CEBEC)



Denmark
Danmarks Elektriske
Materielkontrol
(DEMKO)



Finland
(FIMKO)



France
Union Technique
de l'Electricité
(UTE)



Netherlands
Naamloze Vennoetschap
tot Keuring van
Electrotechnische
Materialien
(KEMA)



Norway
Norges Elektriske
Materiellkontrol
(NEMKO)



Sweden
Svenska
Elektriska Materiel-
kontrollanstalten
(SEMKO)



Switzerland
Schweizerischer
Elektrotechnischer
Verein
(SEV)



An exception is equipment for service installations. The device group of miniature circuit-breakers and residual-current circuit-breakers in certain areas is still subject to mandatory marking and therefore provided with the appropriate approval marks:

Belgium
Comité Electro-
technique Belge
Belgisch Elektro-
technisch Comité
(CEBEC)



Germany
Verband
Deutscher
Elektrotechniker
(VDE)



France
Union Technique
de l'Electricité
(UTE)



Austria
Österreichischer Verband
für Elektrotechnik
(ÖVE)



Switzerland
Schweizerischer
Elektrotechnischer
Verein
(SEV)



Devices for export to the USA and Canada have either additional UL and CSA approval or are available in a separate version with UL and CSA approval.

USA
Underwriters Laboratories
(UL)

Listing



Recognition



Canada
Canadian
Standards
Association
(CSA)



Mandatory approval of electrical products has been recently introduced for

- Slovakia
- Poland
- South Africa
- China
- Russia
- Turkey
- Argentina

Marking is partly mandatory for these countries. The IEC rating data is accepted as in other European countries.

Approval is not mandatory in the Czech Republic and Hungary. The manufacturer's declaration of conformity is sufficient here.

Romania requires that components that are to be used in public buildings must be approved by the Romanian test authority ICECON.

Russia
Devices for Russia must bear the appropriate marking.

Russia
Goststandart
(GOST-R)



South Africa

Approval is mandatory in South Africa for circuit-breakers and busbar trunking systems. These devices must bear the appropriate marking.

South Africa
ZA
SABS



Argentina

In Argentina, mandatory approval is based on Resolution 92/98. From 01/04/2001, miniature circuit-breakers and residual-current circuit-breakers are subject to mandatory approval. From 01/04/2002, protective switches up to $I_e = 63$ A and $U_{e\max} = 440$ V are subject to mandatory approval and must bear the following markings:



Selection of devices

"Selection appropriate for export" does not mean merely meeting the requisite approvals and conformity to relevant specifications. The meaning of the term goes a great deal further by even including that equipment and installations must be designed to a concept with export in mind.

The following are important criteria for selecting switchgear suitable for export:

- **For motor-protective circuit-breakers**

Use inherently short-circuit proof switches capable of controlling the highest prospective fault levels at the point of installation without the need for back-up protection.

Advantage:

- No restrictions whatsoever for installation
- Complete independence from the on-site protective system
- No problems getting spare parts

- **For circuit-breakers**

Use types with visible contacts, quick-make and quick-break operation as standard. Use current-limiting circuit-breakers for high short-circuit levels. **Selective switches are recommended for the selective graduation of networks.**

Advantage:

- Independence from local accident prevention regulations requiring visible contacts, and from faults caused by inexperienced operating personnel.
- The effects of short-circuits are kept to a minimum.
- Fuseless installations offer greater safety and reliability in plant operation. In the event of a fault, only the faulty section of the system is isolated.

- **For contactors**

Use contactors whose entire range provides consistently reliable operation in the event of voltage drops (80% U_n should be aimed for) and whose contact system will not assume an indeterminate position either on closing or on opening in such conditions.

Advantage:

- During the electrification work in areas such as Africa and the Middle East, an insufficient voltage stability is – at least for a certain time – likely in many applications (for example due to long spur lines or small local generators). The use of devices that fulfill the above requirements will eliminate one of the main failure causes related to contactors.

- **For enclosures**

Use insulated enclosures with transparent covers (i.e. "totally insulated" enclosures).

Advantage:

- Total insulation offers the best possible protection from the user's point of view and removes reliance on the skills of local installation personnel. Furthermore, protective measures based on earthing are often extremely difficult or even impossible to implement (in the Middle East, for example, due to the dryness of the ground).
- Insulated enclosures completely eliminate the need for any additional protection against corrosion. The transparent covers contribute significantly to the correct operation of a system, because switchgear operation can be monitored even with the doors or covers closed, thus virtually eliminating the possibility of these being left open through carelessness. The transparent cover is an important contribution to safety, especially where exports to areas of uncertain skills are concerned.

- **For overcurrent protective devices**

Always use circuit-breakers and motor-protective circuit-breakers. Avoid fuses as far as possible.

Advantage:

- The operational reliability of a system is especially important for export contracts. Circuit-breakers and motor-protective circuit-breakers provide this reliability in full measure since they can be immediately reclosed once a fault has been cleared, they disconnect all poles, they have ideal protection through high tripping accuracy and they can be used for selective operation. Because they have no fuses or other consumables, they also greatly reduce the problem of obtaining replacement parts. The advantages of fuseless design for export are especially evident in this case. No complicated investigation is needed to find out which fusing system is used in the respective location and which specifications have to be followed to select the correct fuses. In some countries, several different fuse systems with widely varying characteristics are in use. For the uninitiated, it may be almost impossible to find the right fuse in these circumstances. These problems do not arise where a circuit-breaker is used.

- **For main switches and safety switches**

Use devices with positive contact separation and clear switch position indication.

Advantage:

- The mechanical coupling of the actuating element with the contacts ensures that the Off position is indicated only when all main contacts are separated by the prescribed distance, and only in this position can the switch be padlocked. This ensures safety when carrying out maintenance and repair work on the installation or machinery.

Test authorities

Moeller devices have the approvals required for use in the following countries;
For details → from Page 10/4

USA
USA
UL



Canada
CDN
CSA



Romania
RO
ICECON

ML PAT

Russia
RUS
GOST-R



South Africa
ZA
SABS



Slovakia
SK
SKTC



Poland
PL
BBJ-SEP



Turkey
TR
TSE



China
PRC
CCC



Ukraine
UA
Ukrain-GOST

**Shipping classifications**

Moeller devices have been approved by the following shipping classification societies:
For details → Page 10/10

Germany

Germanischer Lloyd (GL)



Great Britain

Lloyd's Register of Shipping (LR)



France

Bureau Veritas (BV)



Russia

Russian Maritime Register of Shipping (RS)



Italy

Registro Italiano Navale (RINA)



Norway

Det Norske Veritas (DNV)



Poland

Polski Rejestr Statkow (PRS)



	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
Automation systems: Embedded HMI PLC										
XVC-101-C192K-K82	○	○	–	–	–	–	–	–	–	–
XV-101-K42	○	○	–	–	–	–	–	–	–	–
XV-101-K84	○	○	–	–	–	–	–	–	–	–
MC-HPG-210	○	○	–	–	–	–	–	–	–	–
MC-HPG-210-DP	○	○	–	–	–	–	–	–	–	–
MC-HPG-230	○	○	–	–	–	–	–	–	–	–
MC-HPG-230-DP	○	○	–	–	–	–	–	–	–	–
MC-HPG-230-DPS	○	○	–	–	–	–	–	–	–	–
MC-HPG-230-MPI	○	○	–	–	–	–	–	–	–	–
MC-HPG-230-ABGF1	○	○	–	–	–	–	–	–	–	–
MC-HPG-230-GEF	○	○	–	–	–	–	–	–	–	–
MC-HPG-300	○	○	–	–	–	–	–	–	–	–
MC-HPG-300-DP	○	○	–	–	–	–	–	–	–	–
MC-HPG-300-DPS	○	○	–	–	–	–	–	–	–	–
MC-HPG-300-MPI	○	○	–	–	–	–	–	–	–	–
MC-HPG-300-ABGF1	○	○	–	–	–	–	–	–	–	–
MC-HPG-300-GEF	○	○	–	–	–	–	–	–	–	–
PC-based HMI PLC										
XVC-601-GTI-10-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-10-DPM-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-10-DPS-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-12-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-12-DPM-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-12-DPS-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-15-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-15-DPM-V1-000	○	○	–	–	–	–	–	–	–	–
XVC-601-GTI-15-DPS-V1-000	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTR-06-000	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTR-10-000	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTR-12-001	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTR-15-002	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTI-10-000	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTI-12-001	○	○	–	–	–	–	–	–	–	–
XV-DVI-GTI-15-002	○	○	–	–	–	–	–	–	–	–
XCC-601-DVI-V1-000	○	○	–	–	–	–	–	–	–	–
XCC-601-DVI-DPM-V1-000	○	○	–	–	–	–	–	–	–	–
XCC-601-DVI-DPS-V1-000	○	○	–	–	–	–	–	–	–	–
PS416 Modular PLCs										
PS416-AIN-400	●	●	N	–	–	–	–	N	–	●
PS416-AIO-400	●	●	N	–	–	–	–	N	–	●
PS416-BGT-400	●	●	N	–	–	–	–	N	–	●
PS416-BGT-410	●	●	N	–	–	–	–	N	–	●
PS416-BGT-420	●	●	N	–	–	–	–	N	–	●
PS416-BGT-421	●	●	N	–	–	–	–	N	–	●
PS416-CNT-200	●	●	N	–	–	–	–	N	–	●
PS416-COM-200	●	●	N	–	–	–	–	N	–	●
PS416-CPU-200	●	●	N	–	–	–	–	N	–	●
PS416-CPU-300	●	●	N	–	–	–	–	N	–	●
PS416-CPU-400	●	●	N	–	–	–	–	N	–	●
PS416-INP-400	●	●	N	–	–	–	–	N	–	●
PS416-INP-401	●	●	N	–	–	–	–	N	–	●
PS416-MOD-200	–	●	N	–	–	–	–	N	–	●
PS416-NET-210	●	●	N	–	–	–	–	N	–	●
PS416-NET-220	●	●	N	–	–	–	–	N	–	●

Notes

● Approved or accepted
○ Approval applied for

N Approval or acceptance not required
– Not approved or accepted



Moeller HPL0213-2004/2005

	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
PS416 Modular PLCs										
PS416-NET-230	●	●	N	–	–	–	–	N	–	●
PS416-NET-400	●	●	N	–	–	–	–	N	–	●
PS416-NET-440/441	●	●	N	–	–	–	–	N	–	●
PS416-OUT-400	●	●	N	–	–	–	–	N	–	●
PS416-OUT-410	●	●	N	–	–	–	–	N	–	●
PS416-POW-400/420	●	●	N	–	–	–	–	N	–	●
PS416-POW-410	●	●	N	–	–	–	–	N	–	●
PS416-TCS-200	●	●	N	–	–	–	–	N	–	●
xControl										
XC-CPU101-C128K-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU101-C128K-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU101-C64K-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU101-C64K-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU101-C256K-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU101-C256K-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC256K-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC256K-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC512K-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC512K-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC1M-8DI-6DO	●	●	–	–	–	–	–	–	–	–
XC-CPU201-EC1M-8DI-6DO-XV	●	●	–	–	–	–	–	–	–	–
XC-CPU601-E1M	●	●	–	–	–	–	–	–	–	–
XC-CPU601-E2M	●	●	–	–	–	–	–	–	–	–
XC-CPU601-E4M	●	●	–	–	–	–	–	–	–	–
XC-CPU601-E4M-XV	●	●	–	–	–	–	–	–	–	–
XI/OC										
XIOC-110VAC	●	●	–	–	–	–	–	–	–	–
XIOC-12DO-R	●	●	–	–	–	–	–	–	–	–
XIOC-16DI	●	●	–	–	–	–	–	–	–	–
XIOC-16DI-AC	●	●	–	–	–	–	–	–	–	–
XIOC-16DO	●	●	–	–	–	–	–	–	–	–
XIOC-16DO-S	●	●	–	–	–	–	–	–	–	–
XIOC-16DX	●	●	–	–	–	–	–	–	–	–
XIOC-1CNT-100KHZ	●	●	–	–	–	–	–	–	–	–
XIOC-2CNT-2AO-INC	●	●	–	–	–	–	–	–	–	–
XIOC-2AI-1AO-U1	●	●	–	–	–	–	–	–	–	–
XIOC-2AO-U1-2AO-I2	●	●	–	–	–	–	–	–	–	–
XIOC-2AO-U2	●	●	–	–	–	–	–	–	–	–
XIOC-2CNT-100KHZ	●	●	–	–	–	–	–	–	–	–
XIOC-2CNT-2AO-INC	●	●	–	–	–	–	–	–	–	–
XIOC-32DI	●	●	–	–	–	–	–	–	–	–
XIOC-32DO	●	●	–	–	–	–	–	–	–	–
XIOC-4AI-2AO-U1	●	●	–	–	–	–	–	–	–	–
XIOC-4AO-U1	●	●	–	–	–	–	–	–	–	–
XIOC-4AO-U2	●	●	–	–	–	–	–	–	–	–
XIOC-4T-PT	●	●	–	–	–	–	–	–	–	–
XIOC-8AI-I2	●	●	–	–	–	–	–	–	–	–
XIOC-8AI-U1	●	●	–	–	–	–	–	–	–	–
XIOC-8AI-U2	●	●	–	–	–	–	–	–	–	–
XIOC-8DI	●	●	–	–	–	–	–	–	–	–
XIOC-8DO	●	●	–	–	–	–	–	–	–	–
XIOC-DP-M	●	●	–	–	–	–	–	–	–	–
XIOC-SER	●	●	–	–	–	–	–	–	–	–

Notes

● Approved or accepted
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N Approval or acceptance not required
– Not approved or accepted



	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
Compact PLCs										
PRG3-(D)(GB)(F)	—	●	N	●	●	—	—	N	—	—
PS4-101-DD1	●	●	N	●	●	—	—	N	—	●
PS4-111-DR2	●	●	N	●	●	—	—	N	—	●
PS4-141-MM1	●	●	N	●	●	—	—	N	—	●
PS4-151-MM1	●	●	N	●	●	—	—	N	—	●
PS4-201-MM1	●	●	N	●	●	—	—	N	—	●
PS4-271-MM1	●	●	N	—	●	—	—	N	—	●
PS4-341-MM1	●	●	N	—	●	—	—	N	—	●
EM4-101-AA2	●	●	N	●	●	—	—	N	—	●
EM4-101-DD1	●	—	N	—	●	—	—	N	—	●
EM4-101-DD2	●	●	N	●	●	—	—	N	—	●
EM4-101-TX1	●	●	N	●	●	—	—	N	—	●
EM4-101-TX2	●	—	N	—	●	—	—	N	—	●
EM4-102-AA1	●	●	N	●	●	—	—	N	—	●
EM4-111-DR1	—	—	N	●	●	—	—	N	—	●
EM4-111-DR2	●	●	N	●	●	—	—	N	—	●
EM4-201-DX2	●	●	N	●	●	—	—	N	—	●
EM4-204-DX1	●	●	N	●	●	—	—	N	—	●
LE4-104-XP1	●	●	N	●	●	—	—	N	—	●
LE4-108-XD1	●	●	N	●	●	—	—	N	—	●
LE4-108-XR1	●	●	N	●	●	—	—	N	—	●
LE4-116-DD1	●	●	N	●	●	—	—	N	—	●
LE4-116-DX1	●	●	N	●	●	—	—	N	—	●
LE4-116-XD1	●	●	N	●	●	—	—	N	—	●
LE4-206-AA1	●	●	N	●	●	—	—	N	—	●
LE4-206-AA2	●	●	N	—	●	—	—	N	—	●
LE4-308-HX1	●	●	N	●	●	—	—	N	—	●
LE4-308-XH1	●	●	N	●	●	—	—	N	—	●
LE4-501-BS1	●	●	N	●	●	—	—	N	—	●
LE4-503-BS1	●	●	N	●	●	—	—	N	—	●
LE4-504-BS1	●	●	N	—	●	—	—	N	—	●
LE4-504-BT1	●	●	N	—	●	—	—	N	—	●
LE4-505-BS1	●	●	N	—	●	—	—	N	—	●
LE4-622-CX1	●	●	N	●	●	—	—	N	—	●
LE4-633-CX1	●	●	N	—	●	—	—	N	—	●
Communication, telecontrol										
ZB4-501-UM3	●	●	N	—	—	—	—	N	—	—
ZB4-501-UM4	●	●	N	—	—	—	—	N	—	—
ZB4-501-TC1	●	●	N	—	—	—	—	N	—	—
ZB4-501-TC2	●	●	N	—	—	—	—	N	—	—
Display and operator units										
MV4-150-TA1	● ¹⁾	● ¹⁾	—	—	—	—	—	—	—	—
MV4-450-TA1	● ¹⁾	● ¹⁾	—	—	—	—	—	—	—	—
MV4-170-TA1	● ¹⁾	● ¹⁾	—	—	—	—	—	—	—	—
MI4-...	● ²⁾	● ²⁾	—	—	—	—	—	—	—	●
Remote I/O										
XI/ON modular I/O system										
XN-GW-PBDP-1.5MB	●	●	—	—	—	—	—	—	—	—
XN-GW-PBDP-1.5MB-S	●	●	—	—	—	—	—	—	—	—
XN-GW-PBDP-12MB	●	●	—	—	—	—	—	—	—	—
XN-GW-PBDP-12MB-STD	●	●	—	—	—	—	—	—	—	—
XN-GW-CANOPEN	●	●	—	—	—	—	—	—	—	—
XN-GW-DNET	●	●	—	—	—	—	—	—	—	—
XN-BR-24VDC-D	●	●	—	—	—	—	—	—	—	—

Notes

- Approved or accepted
- Approval applied for
- Not approved or accepted

- ¹⁾ cULus approval
- ²⁾ Approval for Recognition only
- N Approval or acceptance not required



Moeller HPL0213-2004/2005

	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
Remote I/O										
XI/ON modular I/O system										
XN-PF-24VDC-D	●	●	—	—	—	—	—	—	—	—
XN-PF-120/230VAC-D	●	●	—	—	—	—	—	—	—	—
XN-2DI-24VDC-P	●	●	—	—	—	—	—	—	—	—
XN-2DI-24VDC-N	●	●	—	—	—	—	—	—	—	—
XN-2DI-120/230VAC-P	●	●	—	—	—	—	—	—	—	—
XN-4DI-24VDC-P	●	●	—	—	—	—	—	—	—	—
XN-4DI-24VDC-N	●	●	—	—	—	—	—	—	—	—
XN-16DI-24VDC-P	●	●	—	—	—	—	—	—	—	—
XN-2DO-24VDC-2A-P	●	●	—	—	—	—	—	—	—	—
XN-2DO-24VDC-0.5A-P	●	●	—	—	—	—	—	—	—	—
XN-2DO-24VDC-0.5A-N	●	●	—	—	—	—	—	—	—	—
XN-2DO-120/230VAC-0.5A	○	○	—	—	—	—	—	—	—	—
XN-4DO-24VDC-0.5A-P	●	●	—	—	—	—	—	—	—	—
XN-16DO-24VDC-0.5A-P	●	●	—	—	—	—	—	—	—	—
XN-2DO-R-CO	●	●	—	—	—	—	—	—	—	—
XN-2DO-R-NC	●	●	—	—	—	—	—	—	—	—
XN-2DO-R-NO	●	●	—	—	—	—	—	—	—	—
XN-1AI-I(0/4...20MA)	●	●	—	—	—	—	—	—	—	—
XN-1AI-U(-10/0...+10VDC)	●	●	—	—	—	—	—	—	—	—
XN-2AI-I(0/4...20MA)	●	●	—	—	—	—	—	—	—	—
XN-2AI-U(-10/0...+10VDC)	●	●	—	—	—	—	—	—	—	—
XN-2AI-PT/NI-2/3	●	●	—	—	—	—	—	—	—	—
XN-2AI-THERMO-PI	●	●	—	—	—	—	—	—	—	—
XN-1AO-I(0/4...20MA)	●	●	—	—	—	—	—	—	—	—
XN-2AO-I(0/4...20MA)	●	●	—	—	—	—	—	—	—	—
XN-2AO-U(-10/0...+10VDC)	●	●	—	—	—	—	—	—	—	—
XN-1CNT-24VDC	●	●	—	—	—	—	—	—	—	—
XN-1RS232	○	○	—	—	—	—	—	—	—	—
XN-1RS485/422	○	○	—	—	—	—	—	—	—	—
XN-1SSI	○	○	—	—	—	—	—	—	—	—
XN-P3T-SBB	●	●	—	—	—	—	—	—	—	—
XN-P3T-SBB-B	●	●	—	—	—	—	—	—	—	—
XN-P4T-SBBC	●	●	—	—	—	—	—	—	—	—
XN-P4T-SBBC-B	●	●	—	—	—	—	—	—	—	—
XN-S3T-SBB	●	●	—	—	—	—	—	—	—	—
XN-S3T-SBC	●	●	—	—	—	—	—	—	—	—
XN-S4T-SBBC	●	●	—	—	—	—	—	—	—	—
XN-S4T-SBCS	●	●	—	—	—	—	—	—	—	—
XN-S4T-SBBS	●	●	—	—	—	—	—	—	—	—
XN-S4T-SBBS-CJ	●	●	—	—	—	—	—	—	—	—
XN-S6T-SBBSBB	●	●	—	—	—	—	—	—	—	—
XN-S6T-SBCSBC	●	●	—	—	—	—	—	—	—	—
XN-B3T-SBB	●	●	—	—	—	—	—	—	—	—
XN-B3T-SBC	●	●	—	—	—	—	—	—	—	—
XN-B4T-SBBC	●	●	—	—	—	—	—	—	—	—
XN-B6T-SBBSBB	●	●	—	—	—	—	—	—	—	—
XN-P3S-SBB	●	●	—	—	—	—	—	—	—	—
XN-P3S-SBB-B	●	●	—	—	—	—	—	—	—	—
XN-P4S-SBBC	●	●	—	—	—	—	—	—	—	—
XN-P4S-SBBC-B	●	●	—	—	—	—	—	—	—	—
XN-S3S-SBB	●	●	—	—	—	—	—	—	—	—
XN-S3S-SBC	●	●	—	—	—	—	—	—	—	—
XN-S4S-SBBC	●	●	—	—	—	—	—	—	—	—
XN-S4S-SBCS	●	●	—	—	—	—	—	—	—	—
XN-S4S-SBBS	●	●	—	—	—	—	—	—	—	—

Notes

● Approved or accepted
○ Approval applied for

— Not approved or accepted



	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
Remote I/O										
XI/ON modular I/O system										
XN-S4S-SBBS-CJ	●	●	—	—	—	—	—	—	—	—
XN-S6S-SBBSBB	●	●	—	—	—	—	—	—	—	—
XN-S6S-SBCSBC	●	●	—	—	—	—	—	—	—	—
XN-B3S-SBB	●	●	—	—	—	—	—	—	—	—
XN-B3S-SBC	●	●	—	—	—	—	—	—	—	—
XN-B4S-SBBC	●	●	—	—	—	—	—	—	—	—
XN-B6S-SBBSBB	●	●	—	—	—	—	—	—	—	—
WINbloc I/O fieldbus components										
PB-DP bridge	●	1)	—	—	—	—	—	—	—	—
DP-BRIDGE/12MB	●	1)	—	—	—	—	—	—	—	—
DP-..DI/...	●	1)	—	—	—	—	—	—	—	—
DP-..DO/...	●	1)	—	—	—	—	—	—	—	—
DP-..DI/..DO/...	●	1)	—	—	—	—	—	—	—	—
DP-1CNT/24V	●	1)	—	—	—	—	—	—	—	—
DP-4AI/...	●	1)	—	—	—	—	—	—	—	—
DP-4AO/UI	●	1)	—	—	—	—	—	—	—	—
DP-3AI/1AO-UI	●	1)	—	—	—	—	—	—	—	—
DP-16DI-P/16DO/0.5A-PK-ECO	●	1)	—	—	—	—	—	—	—	—
ZSB-1.5/...	●	1)	—	—	—	—	—	—	—	—
ZSBE-1.5/...	●	1)	—	—	—	—	—	—	—	—
CAN-BRIDGE	●	1)	—	—	—	—	—	—	—	—
CAN-..DI/...	●	1)	—	—	—	—	—	—	—	—
CAN-..DO/...	●	1)	—	—	—	—	—	—	—	—
CAN-..DI/..DO/...	●	1)	—	—	—	—	—	—	—	—
CAN-3AI/1AO-UI	●	1)	—	—	—	—	—	—	—	—
CAN-4AI/UI	●	1)	—	—	—	—	—	—	—	—
CAN-4AO/UI	●	1)	—	—	—	—	—	—	—	—
CAN-THERMO	●	1)	—	—	—	—	—	—	—	—
CAN-PT100	●	1)	—	—	—	—	—	—	—	—
xStart-XS1										
XS1-DSO-340-...	●	●	—	—	—	—	—	—	○	—
XS1-XBMS-DSO-A	●	●	—	—	—	—	—	—	○	—
XS1-RSO-340-...	●	●	—	—	—	—	—	—	○	—
XS1-XBMS-RSO-A	●	●	—	—	—	—	—	—	○	—
Drives										
Soft starters and accessories										
DM4-340	●	●	—	—	—	—	—	—	—	—
DE4-KEY-2	●	●	—	—	—	—	—	—	—	—
DE4-COM-2X	●	●	—	—	—	—	—	—	—	—
DE4-NET-DP2	●	●	—	—	—	—	—	—	—	—
Frequency inverters and accessories										
DF5-322	●	●	—	—	—	—	—	—	—	—
DF5-340	●	●	—	—	—	—	—	—	—	—
DF6-340	●	●	—	—	—	—	—	—	—	—
DF5-322	●	●	—	—	—	—	—	—	—	—
Control relays										
EASY20S-ASI	●	●	—	—	—	—	—	N	—	●
EASY412-DA-RC	●	●	—	—	—	—	—	N	—	●
EASY412-DC-R	●	●	—	●	—	—	—	N	—	●
EASY412-DC-RC(X)	●	●	—	●	—	—	—	N	—	●
EASY412-DC-TC	●	●	—	—	—	—	—	N	—	●
EASY412-DC-TC(X)	●	●	—	—	—	—	—	N	—	●
EASY412-AC-R	●	●	—	●	—	●	—	N	—	●

Notes

- Approved or accepted
- Approval applied for
- Not approved or accepted

- 1) These products conform to the Canadian National Standard (CNL), but are not approved.
N Approval or acceptance not required



Moeller HPL0213-2004/2005

	Country Test authority									
	USA UL	CDN CSA	RUS GOST-R	SK SKTC	RO ICECON	PL BBJ-SEP	TR TSE	ZA SABS	PRC CCC	UA Ukrain-GOST
Control relays										
EASY412-AC-RC	●	●	–	●	–	●	–	N	–	●
EASY412-AC-RC(X)	●	●	–	–	–	●	–	N	–	●
EASY5...	○	○	–	–	–	–	–	–	–	–
EASY618-DC-RE	●	●	–	–	–	–	–	N	–	●
EASY618-AC-RE	●	●	–	–	–	●	–	N	–	●
EASY619-DC-RC(X)	●	●	–	–	–	–	–	N	–	●
EASY619-AC-RC(X)	●	●	–	–	–	●	–	–	–	–
EASY620-DC-TE	●	●	–	–	–	–	–	N	–	●
EASY621-DC-TC(X)	●	●	–	–	–	–	–	N	–	●
EASY7...	○	○	–	–	–	–	–	–	–	–
EASY200-EASY	●	●	–	–	–	–	–	N	–	●
EASY400-POW	●	●	–	–	–	–	–	N	–	●
EASY819-..	●	●	–	–	–	–	–	–	–	–
EASY820-DC-RC(X)	●	●	–	–	–	–	–	–	–	–
EASY821-DC-TC(X)	●	●	–	–	–	–	–	–	–	–
EASY822-DC-TC(X)	●	●	–	–	–	–	–	–	–	–
Multi-function displays										
MFD-80	●	●	–	–	–	–	–	–	–	–
MFD-80-B	●	●	–	–	–	–	–	–	–	–
MFD-CP8-ME	●	●	–	–	–	–	–	–	–	–
MFD-CP8-NT	●	●	–	–	–	–	–	–	–	–
MFD-R16	●	●	–	–	–	–	–	–	–	–
MFD-RA17	●	●	–	–	–	–	–	–	–	–
MFD-T16	●	●	–	–	–	–	–	–	–	–
MFD-TA17	●	●	–	–	–	–	–	–	–	–
MFD-AC-CP8-ME	○	○	–	–	–	–	–	–	–	–
MFD-AC-CP8-NT	○	○	–	–	–	–	–	–	–	–
MFD-AC-R16	○	○	–	–	–	–	–	–	–	–
MFD-CP4	○	○	–	–	–	–	–	–	–	–
MFD-CP4-500	○	○	–	–	–	–	–	–	–	–
MFD-CP4-800	○	○	–	–	–	–	–	–	–	–
Switched-mode power supply units										
SN4-...	●	●	–	–	–	–	–	–	–	●

Notes

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○ Approval applied for

N Approval or acceptance not required
– Not approved or accepted



	Classification body						
	GB Lloyd's Register of Shipping	D German Lloyd	N Det Norske Veritas	F Bureau Veritas	I Registro Italiano Navale	RUS Russian Maritime Register of Shipping	PL Polski Rejestr Statków
	LR	GL	DNV	BV	RINA	RS	PRS
Automation systems: Compact PLCs							
PS4-101-DD1	●	●	● (DD2)	●	●	●	●
PS4-111-DR1/5	●	●	●	●	●	●	●
PS4-141-MM1	●	●	●	●	●	●	●
PS4-151-MM1	●	●	●	●	●	●	●
PS4-201-MM1/5	●	●	●	●	●	●	●
PS4-341-MM1	●	●	●	●	●	●	–
EM4-101-AA2	●	●	●	●	●	●	●
EM4-101-DD1	●	–	–	●	●	●	●
EM4-101-DD2	●	●	●	–	–	●	–
EM4-101-TX1	●	●	●	●	●	●	●
EM4-101-TX2	●	●	●	●	●	●	●
EM4-111-DR1	●	–	–	●	●	●	●
EM4-111-DR2	–	●	●	–	–	●	●
EM4-201-DX2	●	●	●	●	●	●	●
LE4-108-XD1	●	●	●	●	●	●	●
LE4-108-XR1	●	●	●	●	●	●	●
LE4-116-DD1	●	●	–	●	●	●	●
LE4-116-DX1	●	●	●	●	●	●	●
LE4-116-XD1	●	●	●	●	●	●	●
LE4-206-AA1	●	–	●	●	●	●	–
LE4-206-AA2	●	●	●	●	●	●	●
LE4-206-DD1	–	–	●	–	–	–	–
LE4-504-BT1	–	–	●	–	–	–	–
ZB4-501-UM3	–	–	●	–	–	–	–

Notes

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N Approval or acceptance not required



Moeller HPL0213-2004/2005

	Classification body						
	GB Lloyd's Register of Shipping	D German Lloyd	N Det Norske Veritas	F Bureau Veritas	I Registro Italiano Navale	RUS Russian Maritime Register of Shipping	PL Polski Rejestr Statków
	LR	GL	DNV	BV	RINA	RS	PRS
Control relays							
EASY221-CO	○	○	●	—	—	—	—
EASY412-AC-R	●	●	●	—	—	—	—
EASY412-AC-RC	●	●	●	—	—	—	—
EASY412-AC-RCX	●	●	●	—	—	—	—
EASY412-DA-RC	●	●	●	—	—	—	—
EASY412-DA-RCX	●	●	●	—	—	—	—
EASY412-DC-R	●	●	●	—	—	—	—
EASY412-DC-RC	●	●	●	—	—	—	—
EASY412-DC-RCX	●	●	●	—	—	—	—
EASY412-DC-TC	●	●	●	—	—	—	—
EASY412-DC-TCX	●	●	●	—	●	—	—
EASY618-AC-RE	●	●	●	—	—	—	—
EASY618-DC-RE	●	●	●	—	●	—	—
EASY619-AC-RC	●	●	●	—	●	—	—
EASY619-AC-RCX	●	●	●	—	●	—	—
EASY619-DC-RC	●	●	●	—	●	—	—
EASY619-DC-RCX	●	●	●	—	●	—	—
EASY620-DC-TE	●	●	●	—	●	—	—
EASY621-DC-TC	●	●	●	—	●	—	—
EASY621-DC-TCX	●	●	●	—	●	—	—
EASY819-AC-RC	●	●	●	●	—	—	—
EASY819-AC-RCX	●	●	●	●	—	—	—
EASY819-DC-RC	●	●	●	●	—	—	—
EASY819-DC-RCX	●	●	●	●	—	—	—
EASY820-DC-RC	●	●	●	●	—	—	—
EASY820-DC-RCX	●	●	●	●	—	—	—
EASY821-DC-TC	●	●	●	●	—	—	—
EASY821-DC-TCX	●	●	●	●	—	—	—
EASY822-DC-TC	●	●	●	●	—	—	—
EASY822-DC-TCX	●	●	●	●	—	—	—

Notes

- Approved or accepted
- Approval applied for
- Not approved or accepted

N Approval or acceptance not required



In the USA, the legally established OSHA (Occupational Safety and Health Act) and the NEC (National Electrical Code) require the use of approved devices and systems.

In Canada, all electrical apparatus must comply with the CEC (Canadian Electrical Code), which requires that all equipment and installations have CSA approval.

In view of these requirements, and because US and Canadian standards deviate widely from those of other industrial countries and the IEC, Moeller has, until recently, modified product series to bring them in line with North American standards.

New developments are designed as "devices for world markets" from the outset, which means that they meet all requirements – including those of the USA and Canada – without the need for any additional equipment or modifications.

In addition to the normal UL and CSA approvals, the trade regulations originating from the NAFTA agreements allow the application for a joint UL and CSA approval. The devices then carry a logo that is recognized in both countries.

Because market acceptance of the joint approval is still quite low, Moeller has not made use of this facility until now: Some local inspectors and end users still refuse to accept the joint listing.

This section of the Catalogue contains two groups of switching devices for North America:

1) Devices for world markets with the following main characteristics:





They have all required approvals including the UL and CSA approval (UL = Underwriters Laboratories, CSA = Canadian Standards Association) and can be used throughout the world.

They have ratings plates with all important data for worldwide use as well as their use in the USA and in Canada.

For unrestricted sale in European Union member states, the devices contain the CE mark.

2) Devices for North America with the following main characteristics:

- They are UL- and/or CSA-approved and can be used in the USA, in Canada and in any country in which UL- and CSA-approval or conformance with North American standards are required.
- They have ratings plates containing all important data for use in the USA and in Canada.
- Except for occasional differences in their design detail required for approval, they are largely identical with the normal devices of the same series.
- Approvals for the USA and for Canada are indicated by a suffix in the device's type designation. The type of approval for a device is indicated on the ratings plates by the following type suffixes and approval marks:
- As a rule, devices for North America also carry IEC data or CE-..., for example NZM....-NA circuit-breakers.

Type suffix	Type of approval	Approval mark
-NA	The device is UL- and CSA-approved as discrete device.	
FORM CDN	The device is CSA-approved as discrete device.	
FORM USA	The device is UL-approved as discrete device.	
-CNA	The device contains UL-approved components; its approval conditions must be maintained in use. The device is CSA-approved as discrete device.	

Device types in North America

In Canada and the USA, a distinction is made between distribution equipment and industrial control equipment:

Distribution equipment

This includes, for example

- Circuit-breakers
- Disconnectors
- Switch-disconnectors
- Fuses
- Fused interrupters

These devices are of a rugged design and have larger insulating clearances than other switching devices (for 301 – 600 V: 1 inch = 25.4 mm clearance and 2 inches = 50.8 mm creepage distance). In power distribution switchgear (switchgear, switchboards, panelboards), only these devices must be used for power supply and tap-off. In addition, they are also used as main switches or circuit-breakers in motor and other load circuits in industrial control.

Testing of these devices is especially stringent, with running production being subject to regular checks by test authority inspectors. The type tests for circuit-breakers with UL- and CSA-approval are among the world's strictest tests.

Circuit-breakers from Moeller have passed all of these tests.

Industrial control equipment

This includes, for example

- Contactors
- Contactor relays
- Overload relays
- Motor-protective circuit-breakers
- Rotary switches
- Control circuit devices
- Electronic devices and systems
- User-programmable controllers

These devices have smaller physical dimensions and the insulating clearances are not as great as those of the devices for power distribution. Running production is also monitored by test authority inspectors, but the inspection requirements are not as extensive as those for circuit-breakers.

This industrial control equipment is used mainly in electrical controllers, motor circuits and consumer circuits of all types, in motor control centres (MCC) and in power distribution systems. In controllers, they can be combined directly with devices for power distribution, for example with circuit-breakers as main switches or in a motor feeder.

Performance data for industrial control equipment

Similar to the "utilization categories for low-voltage switchgear" of the IEC and other national standards, "duty types" for the various types of switched loads have been defined for industrial control equipment in Canada and the USA. The type of load for each duty type is indicated on the device's ratings plate or in its technical specifications and defines its application purpose. The table below provides an overview of this assignment.

Duty type

	Load type indicated on the ratings plate
1) Motors	Horsepower (HP)
2) Coils (in auxiliary and control circuits)	Code Designation, Voltampere, Standard Pilot Duty or Heavy Pilot Duty
3) Resistance (heating)	Amperes, resistance only
4) Incandescent lamps	Amperes or Watts, tungsten
5) Ballast (electric discharge lamps)	Amperes, ballast
6) General Use ¹⁾	Amperes (A)

¹⁾ The "General Use" group corresponds with IEC Category AC-1.

Moeller HPL0213-2004/2005

Rating data for approved types ¹⁾	Power supply	Inputs			Outputs			
		Quantity		Rated values	Quantity		Rated values	
		Digital	Analog		Digital	Analog	Standard	Pilot Duty
PS4 compact PLCs								
PS4-101-DD1	24 V DC; 0.2 A	8	—	24 V DC	6	—	24 V DC; 0.5 A	24 V DC; 0.5 A
PS4-111-DR1	115 – 230 V 50/60 Hz/50 mA	8	—	24 V DC	6 relays	—	230 V 50/60 Hz/2 A 24 V DC/2 A	230 V 50/60 Hz/ 1.5 A
PS4-141MM1	24 V DC; 0.3 A	16	2; 0 – 10 V	24 V DC	14	1; 0 – 10 V	24 V DC; 0.5 A	—
PS4-151MM1	115 – 230 V 50/60 Hz/90 mA	16	2; 0 – 10 V	24 V DC	8 relays	1; 0 – 10 V	240 V 50/60 Hz/2 A 24 V DC/2 A	240 V 50/60 Hz/ 1.5 A
PS4-201-MM1	24 V DC; 0.2 A	8	2; 0 – 10 V	24 V DC	6	1; 0 – 10 V	24 V DC; 0.5 A	24 V DC; 0.5 A
PS4-271-MM1	120 – 240 V AC 47 – 63 Hz 0.3 A (120 V AC) 0.15 A (240 V AC)	12	2 × 0 – 10 V/ 0 – 20 mA 2 × Pt1000/ Ni1000	120 V AC 47 – 63 Hz 240 V AC 47 – 55 Hz	8	2 × 0 – 10 V 2 × 0 – 20 mA	250 V AC 8 A (VDE) 250 V AC 10 A (UL/ CSA)	Continuous current at 240 V AC/24 V DC 10/8 A AC: B300 Light Pilot Duty Max. U_e : 300 V AC Max. therm. continuous current p.f. = 1 : 5 A Max. making/breaking apparent power p.f. < 1 : 3600/360 VA DC: R300 Light Pilot Duty max. U_e : 300 V DC Max. therm. continuous current: 1 A Max. making/breaking apparent power: 28/28 VA
PS4-341-MM1	24 V DC; 1 A	16	2; 0 – 10 V	24 V DC	14	1; 0 – 10 V	24 V DC; 0.5 A	—
EM4 expansion units								
EM4-101-DD2	24 V DC; 0.1 A	8, 10	—	24 V DC	8, 6	—	24 V DC; 0.5 A	24 V DC; 0.5 A
EM4-111-DR2	240 V 50/60 Hz/0.3 A	8	—	24 V DC	6 relays	—	240 V 50/60 Hz/2 A 24 V DC/ 2 A	240 V 50/60 Hz/1.5 A 24 V DC, 2 A
EM4-101-AA2	24 V DC; 0.15 A	—	8 0 – 5 V, 0 – 10 V, –5 – +5 V, –10 – +10 V 0 – 20 mA	—	—	4; 0 – 10 V, –10 – +10 V	—	—
EM4-102-AA1	24 V DC; 0.15 A	—	6 0 – 5 V, 0 – 10 V, –5 – +5 V, –10 – +10 V 0 – 20 mA	—	—	4; 0 – 10 V, –10 – +10 V	—	—
EM4-101-TX1	24 V DC; 0.15 A	—	6 Temperature (PT,Ni); 2; 0 – 10 V	—	—	—	—	—
EM4-101-TX2	24 V DC; 0.15 A	—	6 Thermo- couples J, K, L	—	—	—	—	—
EM4-201-DX2	24 V DC; 0.4 A	16	—	24 V DC	—	—	—	—
EM4-204-DX1	24 V DC; 0.8 A	16	—	24 V DC	—	—	—	—

General technical data

Maximum operating temperature	55 °C
Terminal cross-section	AWG 28-12
Tightening torque	0.6 Nm

Notes

¹⁾ Devices for world markets: IEC ≙ UL/CSA



10/14 Automation systems

LE4 expansion units, PS416 modular PLCs

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Approvals for world markets

Rating data for approved types ¹⁾	Power supply	Inputs		Rated values	Outputs		Rated values	
		Quantity			Quantity		Standard	Pilot Duty
		Digital	Analog		Digital	Analog		
LE4 expansion units								
LE4-116-DD1	24 V DC; 0.1 A	8	–	24 V DC	8	–	24 V DC; 0.5 A	–
LE4-116-DX1	24 V DC; 0.1 A	16	–	24 V DC	–	–	–	–
LE4-116-XD1	24 V DC; 0.1 A	–	–	–	16	–	24 V DC; 0.5 A	24 V DC; 0.5 A
LE4-108-XR1	24 V DC; 0.1 A	–	–	–	8 relays	–	240 V 50/60 Hz/2 A	240 V 50/60 Hz/1.5 A 24 V DC/2 A
LE4-108-XD1	–	–	–	–	8	–	24 V DC; 2 A	–
LE4-308-HX1	–	8; 120 V AC 50/60 Hz 240 V AC 50 Hz	–	240 V AC 50 Hz	–	–	–	–
LE4-308-XH1	–	–	–	–	8 Triac	–	120/240 V 50/60 Hz/0.5 A	–
LE4-622-CX1	–	2 × 30 kHz	–	–	–	–	–	–
LE4-633-CX1	–	3 SSI	–	–	–	–	–	–
LE4-206-AA1	–	–	4; 0 – 10 V	–	–	2; 0 – 10 V	–	–
LE4-206-AA2	–	–	4; 0(4)–20mA	–	–	2; 0(4)–20mA	–	–
LE4-501-BS1	–	Suconet K		–	–	–	–	–
LE4-503-BS1	–	PROFIBUS-FMS		–	–	–	–	–
LE4-504-BS1	–	PROFIBUS DP master		–	–	–	–	–
LE4-504-BT1	–	PROFIBUS DP slave		–	–	–	–	–
LE4-505-BS1	–	AS-Interface		–	–	–	–	–
ZB4-501-TC1	9 V DC; 100 mA	Telecontrol module		–	–	–	–	–
ZB4-501-TC2	24 V DC; 100 mA	Telecontrol module		–	–	–	–	–
ZB4-501-UM3	9 V DC; 100 mA	Interface converter		–	–	–	–	–
ZB4-501-UM4	24 V DC; 100 mA	Interface converter		–	–	–	–	–

General technical data

Maximum operating temperature	55 °C
Terminal cross-section	0.14 – 1.5 mm ² , AWG 28 – 12
Tightening torque	0.25 – 0.35 Nm

Rating data for approved types ¹⁾	Function	Power supply		Inputs	Quantity	Outputs	Quantity
		External	Bus side				
				Rated values	Digital	Rated values	Digital
PS416 modular PLCs							
PS416-BGT-400	Rack 9 free slots	–	5 V DC; ≤ 0.5 A	–	–	–	–
PS416-BGT-410	Rack 13 free slots	–	5 V DC; ≤ 0.5 A	–	–	–	–
PS416-BGT-420	Rack 19 free slots	–	5 V DC; ≤ 0.5 A	–	–	–	–
PS416-BGT-421	Rack for flush mounting 19 free slots	–	5 V DC; ≤ 0.5 A	–	–	–	–
PS416-POW-400	Power supply	230 V AC	5 V DC; 1.5–8 A	–	–	5 V DC/0.5–8 A	–
PS416-POW-410	Power supply	24 V DC	5 V DC; 1.5–10A	–	–	–	–
PS416-POW-420	Power supply	115 V AC	5 V DC; 1.5–8 A	–	–	5 V DC/0.5–8 A	–
PS416-CPU-200	CPU card	–	5 V DC; 1 A	–	–	–	–
PS416-CPU-300	CPU card	–	5 V DC; 1.5 A	–	–	–	–
PS416-CPU-400	CPU card	–	5 V DC; 1.5 A	–	–	5 V DC/1 A	–
PS416-INP-400	Digital input card 16 inputs (3.0/3.0 ms)	24 V DC; 8.6 mA/ input	5 V DC; 30 mA	24 V DC	16	24 V DC 6 mA/input	–
PS416-INP-401	Digital input card 16 inputs (0.2/0.3 ms)	24 V DC; 8.6 mA/ input	5 V DC; 30 mA	24 V DC	16	24 V DC 6 mA/input	–
PS416-OUT-400	Digital output card 16 outputs	24 V DC; 0.23 mA/output	5 V DC; 1.5 A	–	–	24 V DC/0.5 A	–
PS416-OUT-410	Digital output card 8 outputs	24 V DC; 70 mA at no load	5 V DC; 85 mA	–	–	24 V DC/2 A	8

Notes

¹⁾ Devices for world markets: IEC ≙ UL/CSA

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Rating data for approved types ¹⁾	Function	Power supply		Inputs Rated values	Outputs Rated values	Quantity Digital
		External	Bus side			
PS416 modular PLCs						
PS416-AIN-400	Analog input card 8 inputs	–	5 V DC; 0.7 A	±5 V; 0 – 5 V; ±10 V; 0 – 10 V; 0 – 1 V; 0 – 20 mA; 4 – 20 mA	–	–
PS416-AIO-400	Analog input/output card 4 inputs/4 outputs	–	5 V DC; 1 A	±5 V; 0 – 5 V; ±10 V; 0 – 10 V; 0 – 20 mA; 4 – 20 mA	±5 V; 0 – 5 V; ±10 V; 0 – 10 V; 0 – 20 mA; 4 – 20 mA	–
PS416-NET-210	Suconet K	–	5 V DC; 0.7 A	–	–	–
PS416-NET-220	InterBus-S	–	5 V DC; 1.7 A	–	–	–
PS416-NET-230	PROFIBUS-FMS	–	5 V DC; 1 A	–	–	–
PS416-NET-400	Suconet K	–	5 V DC; 0.25 A	–	–	–
PS416-NET-440	PROFIBUS DP master	–	5 V DC; 0.8 A	–	–	–
PS416-NET-441	PROFIBUS DP slave	–	5 V DC; 0.5 A	–	–	–
PS416-COM-200	Serial communication card	–	5 V DC; 1 A	–	–	–
PS416-MOD-200	Communication card	–	5 V DC; 0.93 A	–	5 V DC; 0.5 A	–
PS416-TCS-200	Telecontrol module	–	5 V DC; 1 A	–	–	–
PS416-CNT-200	Counter card	24 V DC; 0.25 A	5 V DC; 0.35 A	Max. 6 5/24 V DC; Max. 50 kHz	–	–

General technical data

Maximum operating temperature	55 °C
Terminal cross-section	0.14 – 1.5 mm ² , AWG 28 – 16
Tightening torque	0.25 – 0.35 Nm

Display and operator units

MI4²⁾						
MI4-110-KC1	Text operator panel	24 V DC	–	–	–	–
MI4-117-KC1 ⁴⁾	Text operator panel	24 V DC	–	–	–	–
MI4-117-KD1 ⁴⁾	Text operator panel	24 V DC	–	–	–	–
MI4-110-KD1	Text operator panel	24 V DC	–	–	–	–
MI4-110-KG1	Text operator panel	24 V DC	–	–	–	–
MI4-110-KG2	Text operator panel	24 V DC	–	–	–	–
MI4-140-KF1	Text operator panel	24 V DC	–	–	–	–
MI4-140-KI1	Text operator panel	24 V DC	–	–	–	–
MI4-150-KI1	Graphics operator panel	24 V DC	–	–	–	–
MI4-130-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-137-TA1 ⁴⁾	Touch operator panel	24 V DC	–	–	–	–
MI4-140-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-150-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-160-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-450-KI1	Graphics operator panel	24 V DC	–	–	–	–
MI4-450-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-550-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-570-KH1	Graphics operator panel	24 V DC	–	–	–	–
MI4-570-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-580-TA1	Touch operator panel	24 V DC	–	–	–	–
MI4-590-TA1	Touch operator panel	24 V DC	–	–	–	–
MV4³⁾						
MV4-150-TA1	Touch operator panel	24 V DC	–	–	–	–
MV4-450-TA1	Touch operator panel	24 V DC	–	–	–	–
MV4-170-TA1	Touch operator panel	24 V DC	–	–	–	–

General technical data

Maximum operating temperature	50 °C (max. 45 °C: MI4-150/160/450/550/570/580/590-TA1)
Terminal cross-section	2 × 1.5 mm ²

Notes

¹⁾ Devices for world markets:
IEC Δ UL/CSA
²⁾ cULus approval

³⁾ Approval for UR only
⁴⁾ cULus approval applied for



This glossary contains brief explanations of the terms used in this section.

For further definitions, see the main glossary in section 11.

Abbreviations

AWG	American Wire Gauge	An American unit of measurement, the AWG or MCM value indicates wire thickness. For a conversion to mm and inches, see http://www.coilcraft.com/awg.html
HP	Horsepower	1 HP = 0.75 kW; 1 PS = 0.986 HP

Organizations

CSA	Canadian Standards Association	Further information at: http://www.csa.ca
NEC	National Electrical Code	Further information at: http://www.nfpa.org
NEMA	National Electrical Manufacturers Association	Further information at: http://www.nema.org
NFPA	National Fire Protection Association	Further information at: http://www.nfpa.org
OSHA	Occupational Safety and Health Administration	Further information at: http://www.osha.gov
UL	Underwriters Laboratories	Further information at: http://ultesting.com

Terminology

A600, Q300, B300	Indicate magnitude and type of switching capacity in control circuits.
Instantaneous	Tripping without delay
Molded case switch	Switch-disconnector in circuit-breaker format
Pilot Duty	Control circuit duty type
Heavy Pilot Duty	Highest duty type for control circuits
Standard pilot duty	Normal duty type for control circuits

