

NKCR.E148904 Auxiliary Devices

Auxiliary Devices

See General Information for Auxiliary Devices

EAO-ESA-ELEKTRO ZWEIGNIEDERLASSUNG
AUERBACH DER EAO LUMITAS GMBH
RICHARD-WAGNER-STRASSE 3
08209
AUERBACH/VOGTLAND, GERMANY

E148904

Contact assembly, Cat. No. 44 followed by 1 or 2, followed by 1, 2, 3, 4, 5 or 6, followed by 1 .

Lamp assembly, Cat. No. 44 followed by 52, followed by 4 or 5 .

Push button actuator, Cat. No. 44 followed by 7, followed by 01, 02, 03, 04, 05, 06, 07, 10, 11, 12, 13, 20, 22, 24, 25, 26, 27, 30, 32, 34, 35, 36, 37, 42, 44, 45, 46, 47, 50 or 51, followed by 2 or 6, followed by 0, 1, 2, 3, 4, 5, 6, 7, 8 or 9 .

Push button hole plug, Cat. No. 44 followed by 9, followed by 14 or 15 .

Transformer assembly, Cat No. 44 followed by 9, followed by 70, 71, 72, 75, 76, 77, 80, 81, 82, 85, 86 or 87 .

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NKCR.GuideInfo Auxiliary Devices

[Industrial Control Equipment] (Motor Controllers) Auxiliary Devices

See General Information for Motor Controllers

GENERAL

This category covers machine-operated switches, magnetically-operated control switches, miscellaneous manually-operated switches, push-button stations (including parts such as pilot lights and selector switches), thermal and magnetic overload relays, and time-delay relays.

These devices are for use in control circuits of magnetic motor controllers and the like. Such devices are marked with the voltage rating and whether they are intended for Standard or Heavy Duty, or with a code designation such as A600, B600, etc. These codes represent the control circuit load which may be controlled by the device. The significance of each code is shown in the tables below. Standard Duty indicates ratings under Codes B and P and Heavy Duty indicates ratings under Codes A and N for the marked voltage rating.

RATING CODES FOR AC CONTROL-CIRCUIT CONTACTS AT 50 AND 60 Hz

Contact Rating Code	Thermal Continuous Test	Max Current Amps ^b								Max	
		120 V		240 V		480 V		600 V		Volt-amps	
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
Dsg ^a	Current Amps										
A150	10	60	6.00	—	—	—	—	—	—	7200	720
A300	10	60	6.00	30	3.00	—	—	—	—	7200	720
A600	10	60	6.00	30	3.00	15	1.50	12	1.20	7200	720
B150	5	30	3.00	—	—	—	—	—	—	3600	360
B300	5	30	3.00	15	1.50	—	—	—	—	3600	360
B600	5	30	3.00	15	1.50	7.5	0.75	6	0.60	3600	360
C150	2.5	15	1.5	—	—	—	—	—	—	1800	180
C300	2.5	15	1.5	7.5	0.75	—	—	—	—	1800	180
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3.00	0.30	1800	180
D150	1.0	3.60	0.60	—	—	—	—	—	—	432	72
D300	1.0	3.60	0.60	.180	0.30	—	—	—	—	432	72
E150	0.5	1.80	0.30	—	—	—	—	—	—	216	36

Note: aThe numerical suffix designates the maximum voltage design values which are to be 600 V, 300 V and 150 V for suffixes 600, 300 and 150, respectively.

Note: bFor maximum ratings at voltages between the maximum design value and 120 V, the maximum make and break ratings are to be obtained by dividing the volt-ampere rating by the application voltage. For voltages below 120 V, the maximum make current is to be the same as for 120 V, and the maximum break current is to be obtained by dividing the break volt-amperes by the application voltage, but are not to exceed thermal continuous test current.

Added Table 1 Effective June 3, 1976

RATING CODES FOR DC CONTROL-CIRCUIT CONTACTS

Contact Rating Code Designation ^a	Thermal Continuous Test Current Amps	Max Make or Break ^b Current Amps			Max Make or Break V Amps at 300 V or Less
		125 V	250 V	301 to 600 V	
N150	10	2.2	—	—	275
N300	10	2.2	1.1	—	275
N600	10	2.2	1.1	0.40	275
P150	5.0	1.1	—	—	138
P300	5.0	1.1	0.55	—	138
P600	5.0	1.1	0.55	0.20	138

Note: aThe numerical suffix designates the maximum voltage design values which are to be 600 V, 300 V and 150 V for suffixes 600, 300 and 150, respectively.

Note: bFor maximum ratings at 300 V or less, the maximum make and break ratings are to be obtained by dividing the volt-ampere rating by the application voltage, but are not to exceed the thermal continuous test current.

ADDITIONAL INFORMATION

For additional information, see Motor Controllers (**NJOT**), Industrial Control Equipment (**NIMX**) and Electrical Equipment for Use in Ordinary Locations (**AALZ**).

REQUIREMENTS

The basic standard used to investigate products in this category is UL 508, "Industrial Control Equipment."

UL MARK

The UL symbol on the product and the Listing Mark of Underwriters Laboratories Inc. on the smallest unit container in which the product is packaged or the Listing Mark on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and the product name "Industrial Control Equipment" (or "Ind. Cont. Eq.").

NJOT.GuideInfo Motor Controllers

[Industrial Control Equipment] Motor Controllers

See General Information for Industrial Control Equipment

This listing covers the following devices rated 600 v or less, and those rated 701-1500 v:

Auxiliary Devices

Combination Motor Controllers.

Float- and Pressure-Operated Motor Controllers

Magnetic Motor Controllers

Manual Motor Controllers

Miscellaneous Motor Controllers

Power Conversion Equipment

Some Motor Controllers are open type (without enclosures). This means that such devices are for use as parts of Listed equipment where the acceptability of the combination has been determined by Underwriters Laboratories Inc. or where open type devices are acceptable.

This Listing also covers enclosures for housing open type devices. Such enclosures are marked to identify the open type devices which may be suitably installed therein.

Motor Controllers intended for across-the-line starting and for making and breaking the circuit when the motor is stalled are tested at rated voltage and at six times motor full load running current for a-c ratings and at ten times motor full load running current for d-c ratings.

Motor Controllers incorporating thermal cutouts, thermal overload relays or other devices for motor running overcurrent protection are considered to be suitably protected against overcurrent due to short circuits or grounds by motor branch circuit, short circuit and ground fault protective devices selected in accordance with the National Electrical Code and any additional information marked on the product. Motor Controllers may specify that protection is to be provided by fuses or by an inverse time circuit breaker. If there is no marking on protective device type, controllers are considered suitably protected by either type of device. Motor Controllers may specify a maximum rating of protective device. If not marked with a rating, the controllers are considered suitably protected by a protective device of the maximum rating permitted by the National Electrical Code.

Unless otherwise marked, motor controllers incorporating thermal cutouts or overload relays are considered suitable for use on circuits having available fault currents not greater than:

Rating HP (600 V) Max)	Full Load Current Amps (701-1500v)	RMS Symmetrical Amps
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1 or less	—	1,000
1-1/2 to 50	0-50	5,000
51 to 200	51-200	10,000
201 to 400	201-400	18,000
401 to 600	401-600	30,000
601 to 900	601-850	42,000
901 to 1600	851-1500	85,000

Motor Controllers which are marked "Suitable For Use On A Circuit Capable Of Delivering Not More Than _____ RMS Symmetrical Amps, _____ Volts Maximum" have been investigated for the additional rating indicated.

Motor Controllers for group installations are marked with a maximum rating of fuse which is considered to suitably protect the controller for the group installation. Such fuse ratings may be in excess of the values given above.

Controllers for Electric Motor Drive Fire Pumps are listed in the Fire Protection Equipment List under the Pump Controller section.

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NIMX.GuideInfo

Industrial Control Equipment

Industrial Control Equipment

Guide Information for Electrical Equipment for Use in Ordinary Locations

The listing covers the following products:

Industrial Control Panels

Motor Control Centers

Motor Controllers

Miscellaneous Apparatus

Programmable Controllers

Industrial Control Switches

Enclosed industrial control equipment identified with an enclosure type designation is intended for use as indicated in the guide information at the front of this directory (AALZ).

Industrial Control Equipment, is for use with copper conductors unless marked to indicate which terminals are suitable for use with aluminum conductors. Such marking is independent of any marking on terminal connectors and is on a wiring diagram or other readily visible location.

Industrial Control Equipment, for which accessory kits are available for the field or distributor modification of the basic product or which may be assembled in many forms from separate components are marked to indicate the suitable accessories or separate components which may be used.

Control Panels

If the sealed rating of the operating coil circuit of a magnetically operated industrial control device exceeds 125 volt-amperes, the coil circuit rating is marked on the device.

Overload relays or industrial control equipment incorporating overload relays are identified as to their maximum tripping time at 600 per cent of the overload relay current element trip rating. The designations "Class 10, Class 20, and Class 30" are used to identify the maximum tripping times, with the Class number indicating the maximum tripping time in seconds. Overload relays with maximum tripping times of 10 or 30 seconds are marked Class 10 or Class 30 respectively. Overload relays with a maximum tripping time of 20 seconds may be marked Class 20. Overload relays with tripping times in excess of 30 seconds are marked with their maximum tripping times. All unmarked overload relays have a maximum tripping time of 20 seconds.

There are open, across-the-line starters intended for bolt on mounting to panelboards and dead front switchboards and are so restricted by the Listing Mark. They are provided with a cover or door and the remaining portions of the enclosure are provided by the panel or switchboard enclosure.

Some industrial control equipment is suitable for use as service equipment and may be so marked. Such marking is part of the Listing Mark or is an integral part of other required markings.

Some of the equipment listed in this category has also been investigated for use aboard marine vessels over 65 ft. in length as covered by the Electrical Engineering Regulations of the United States Coast Guard, Subchapter J, CG-259, (46 CFR Parts 110-113).

The Electrical Engineering Regulations of the United States Coast Guard classify marine type equipment as "Non-Watertight," "Drip-proof," or "Watertight."

Some industrial control equipment incorporates neutrals factory bonded to the frame or enclosure. Such units are marked "Suitable Only For Use As Service Equipment."

Open type across-the-line starters designed only for use in panelboards or dead front switchboards employ Listing Marks with the product identity "INDUSTRIAL CONTROL EQUIPMENT FOR USE IN PANELBOARDS AND DEAD FRONT SWITCHBOARDS" or "IND. CONT. EQ. FOR USE IN PANELBOARDS AND DEAD FRONT SWITCHBOARDS."

For other than industrial control panels, and unless indicated otherwise in the general information for the following subcategories, enclosed type product Listing Marks contain the product identity "INDUSTRIAL CONTROL EQUIPMENT" or the abbreviation "IND. CONT. EQ." on the enclosure, or the product identity "INDUSTRIAL CONTROL EQUIPMENT ENCLOSED" on the mechanism mounted within the enclosure. In either case, the Listing Mark indicates that the overall product with its enclosure is Listed.

Enclosures for use with open type products employ Listing Marks with the product identification "Enclosure For Industrial Control Equipment" or "Enclosure For Ind. Cont. Eq." and are marked to specify the Listed open type products to be installed within. Look for a Listing Mark on both the enclosure and the open mechanism.

For industrial control panels, one of the following product identities appears on the Listing Mark: "Open Industrial Control Panel", "Industrial Control Panel Enclosure", "Enclosed Industrial Control Panel".

The "Enclosed Industrial Control Panel" Listing Mark covers both the enclosure and the panel provided with it. Open panels employ the "Open Industrial Control Panel" Listing Mark. The "Industrial Control Panel Enclosure" Listing Mark covers only the enclosure; the compatibility of the enclosure and the installed equipment and associated wiring has not been investigated unless an "Enclosed Industrial Control Panel" Listing Mark is also present.

The Listing Mark of Underwriters Laboratories Inc. on the product is the only method provided by UL to identify products manufactured under its Listing and Follow-Up Service. The Listing Mark for these products includes the UL symbol (as illustrated in the Introduction of this Directory) together with the word "LISTED," a control number, and one of the following product names as appropriate: "Industrial Control Equipment" (or "Ind. Cont. Eq."); "Marine Industrial Control Equipment For Use Only On Vessels Over 65 Feet".

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