

Surge Protective Devices



IE Series

SOLAHD™


EMERSON™

IE Series

Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Appleton Grp LLC d/b/a Appleton Group for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Introduction

The IE Series offers high frequency noise filter capabilities with surge protection for loads up to 20 A of continuous current. This product is a DIN or flange mounted device that helps to protect industrial critical loads.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, NOM-029-STPS or CSA Z462.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- This equipment must be effectively grounded per all applicable codes. Use an equipment-grounding conductor to connect this equipment to the power system ground.
- Do not supply more than 24VDC / 24VAC and no more than a current of 2A to contacts.
- Confirm that the Surge Protective Device voltage rating on the module or nameplate label is not less than the operating voltage.

Failure to follow these instructions will result in death or serious injury.



WARNING: This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, and DIDP which is known to the State of California to cause birth defects or other reproductive harm. For more information go to: www.P65Warnings.ca.gov.

NOTICE

LOSS OF SURGE SUPPRESSION

- Make certain the Surge Protective Device is disconnected from the circuit it is protecting before conducting high potential insulation testing.

Failure to follow these instructions can result in equipment damage.

Installation

1. Turn off all power supplying this equipment before working on or inside equipment.
2. Confirm that the unit has the same voltage rating and configuration as the power system voltage and power system voltage to which it will be connected.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Confirm that the Surge Protective Device voltage rating on the module or nameplate label is not less than the operating voltage.

Failure to follow these instructions will result in death or serious injury.

3. Install the unit and cables as close as possible to the protected equipment and secure.
4. Connect the supply cables to the line side of the device.
5. Complete the circuit by connecting cables from the load of the device to the protected equipment.
Note: A dry contact connection is available.
6. Check that all connections are secure. Remove all tools and discarded hardware from the unit.
7. Replace the barrier, cover/door and/or trim to the equipment.
8. Equipment may be re-energized after all the above steps are complete.

Table 1: Ratings

Service Voltage	MCOV	Continuous Current	Normal Discharge Current	Fusing Circuit Breaker Size	Certification	Catalog Numbers
120 V, 50/60 Hz, 1-phase 2 wire + ground	150 V (L-N)	3 A	3 kA	25 A Class CC Fuse	UL1449 / UL1283 CSA C22.2 No. 269.5	IE103
		5 A				IE105
		10 A				IE110
		20 A				IE120
240 V, 50/60 Hz, 1-phase 2 wire + ground	275 V (L-N)	3 A				IE203
		5 A				IE205
		10 A				IE210
		20 A				IE220

Voltage, Current and Power Configurations					
Catalog Number	Load Current	Wire Size Range (AWG)	Required Torque (lb-in.)	Fuse/Circuit Breaker Ampacity	
				Suggest	Max
Single-Phase Models (120 VAC)					
IE103	3.0 A	12 - 14	12.1 lb-in. (1.37 N•m)	3.0 A	3.75 A
IE105	5.0 A			5.0 A	6.25 A
IE110	10.0 A			10.0 A	12.5 A
IE120	20.0 A			20.0 A	25.0 A
Single-Phase Models (240 VAC)					
IE203	3.0 A	12 - 14	12.1 lb-in. (1.37 N•m)	3.0 A	3.75 A
IE205	5.0 A			5.0 A	6.25 A
IE210	10.0 A			10.0 A	12.5 A
IE220	20.0 A			20.0 A	25.0 A

Description	Catalog Number	
	IE1XX	IE2XX
Input Voltage	120 V (0–150 VRMS)	240 V (0–275 VRMS)
Line Frequency	47–63 Hz	
Response Time	< 0.5 ns normal mode; < 5 ns common mode	
Enclosure	Fully enclosed polycarbonate housing	
Connection/Mounting Type	DIN rail or Panel mount	
Status Indication	Green LED “OK”, Form C contact, 5 A @ 125 VAC or 5 A @ 100 VDC	
Dimensions H x W x D	4.88 x 2.56 x 4.56in. (124 x 65 x 116mm)	
Operating Temperature	-40°C to +50°C at full load; derate linearly to 60% at +70°C	
Operating Humidity	0% to 95% Non-condensing	
Peak Surge Current Capability		
Per Phase	19,500 A	
Line to Neutral	13,000 A	
Line to Ground	6,500 A	
Neutral to Ground	6,500 A	
Load Surge Current Rating	10 ms	5 x Nominal
	1 s	3 x Nominal
	10 s	2 x Nominal
Nominal Discharge Current Rating	3 kA	
Short Circuit Current Rating (SCCR)	5kA	
Maximum Continuous Operating Voltage (MCOV)	150V L-N, L-G, N-G	320 L-L
Frequent Response		
Normal Mode (forward-reverse)	100 kHz to 50 MHz	-90 dB Max
Common Mode (forward-reverse)	5 kHz to 50 MHz	-60 dB Max
Transient Reduction (IEEE C62.41)* *All Voltage configurations are single phase, 2 wire + ground	Typical Category A Ringwave (6 kV, 200 A, 100 kHz) < 60 V peak	
	Typical Category B Ringwave (6 kV, 500 A, 100 kHz) < 100 V peak	
Standards Certification	cRUUs: UL 1449, CSA 22.2 No. 269, UL 1283, CSA 22.2 No. 8 (recognized component), CE	
Warranty	5 year limited warranty	

IE Series

Table 2: General Specifications¹

Mounting	Power Connection	Wiring (Copper Wire)	Terminal Torque	Operating / Storage Temperature	Catalog Numbers
DIN rail or surface mount	Line / Neutral / Ground	18–12 AWG	4 lb-in. (0.45 N•m)	+32 °F to +77 °F (0 °C to +25 °C)	IE103
		14–10 AWG	7 lb-in. (0.45 N•m)		IE105
		12–10 AWG			IE110
					IE120
					IE203
					IE205
					IE210
					IE220

¹ Contains no serviceable parts.

Figure 1: DIN Rail Installation and Removal

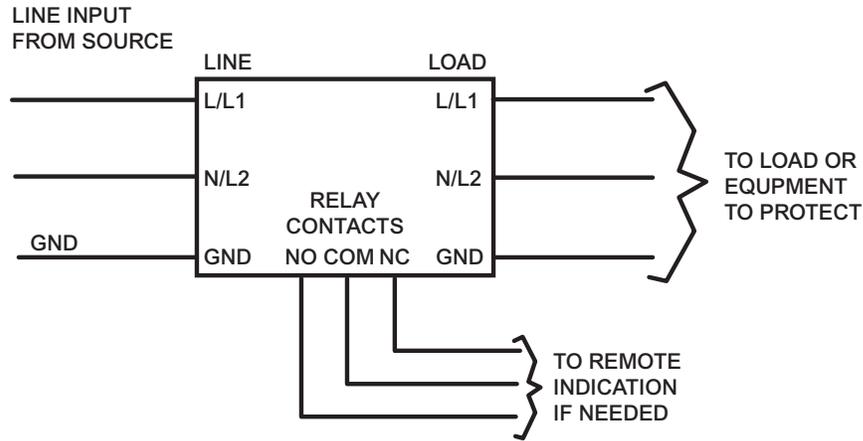


Figure 2: DIN Clips



Note: DIN-Rail clips can be positioned for vertical or horizontal installation.

Figure 3: Connections and Wiring



Diagnostic Operation

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, CSA Z462, or NOM-029-STPS.

Failure to follow these instructions will result in death or serious injury.

Indicator Status ON =

The device is installed correctly and the line side has power.

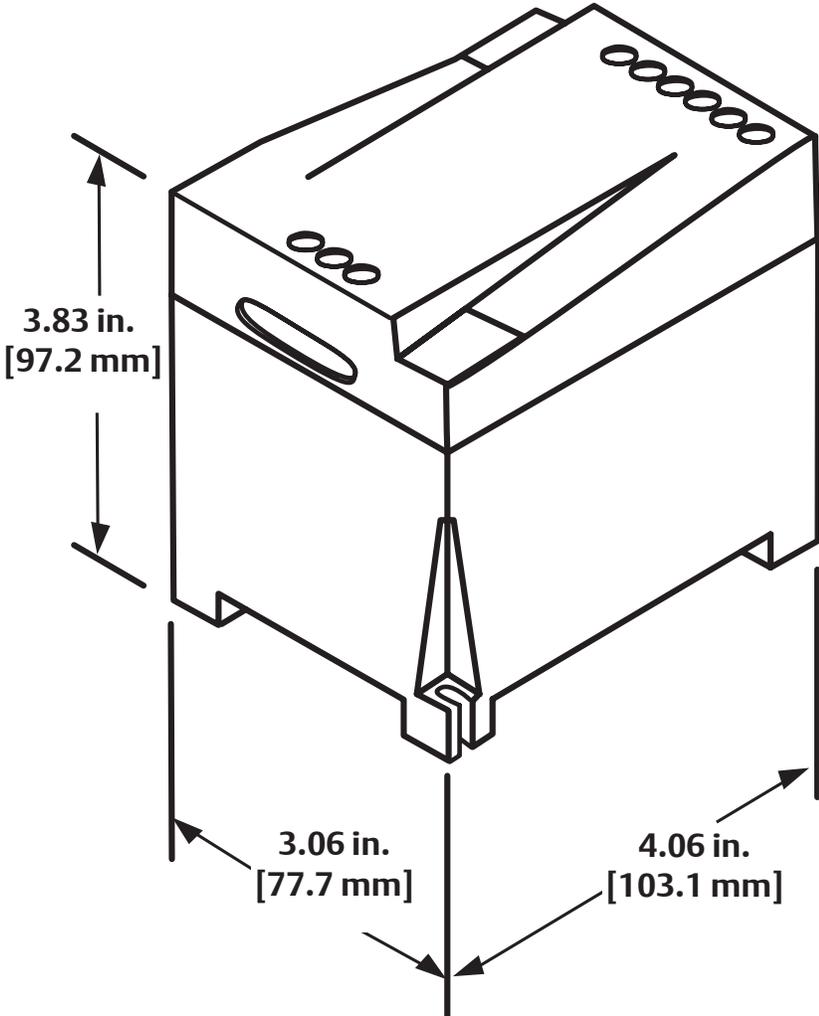
Indicator Status OFF =

Check connections, verify that the line voltage is at the point of connection; if all is correct, then replace the device.

Dry Contact Terminal	Power OFF	Power ON
N/O Normally Open	Open	Closed
COM Common	Common	Common
N/C Normally Closed	Closed	Open

IE Series

Dimensions (in. / [mm]) and weights (lb. / kg.)



Catalog Numbers	Weights (lb./kg.)
IE103	0.94 lb. (0.42 kg)
IE105	0.95 lb. (0.43 kg)
IE110	1.2 lb. (0.58 kg)
IE120	1.4 lb. (0.64 kg)
IE203	0.94 lb. (0.42 kg)
IE205	0.95 lb. (0.43 kg)
IE210	1.2 lb. (0.58 kg)
IE220	1.4 lb. (0.64 kg)

Technical Support

Website: www.solahd.com

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Toll-Free: (800) 377-4384

USA: (847) 268-6651

Warranty

Please refer to the “Terms & Conditions of Sale” document.

While every precaution has been taken to ensure accuracy and completeness in this manual, Appleton Grp LLC d/b/a Appleton Group assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

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