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## ACS800 Input Protective Devices

| Voltage      | Part number           | Frame | HP <sub>L</sub> | A <sub>L</sub> | HP <sub>H</sub> | A <sub>H</sub> | Reactor Part Number                                | Reactor Frame | Type/Description<br>Chassis Configuration | Fuses                                                           | Fuse Qty | Fuse Block   | Fuse Block Qty | Fuse Block Cover | Fuse Cover Qty |
|--------------|-----------------------|-------|-----------------|----------------|-----------------|----------------|----------------------------------------------------|---------------|-------------------------------------------|-----------------------------------------------------------------|----------|--------------|----------------|------------------|----------------|
|              |                       |       |                 |                |                 |                | Open Frame Device (See Table Below For Enclosures) |               |                                           | Open Fuse Blocks (Other Methods of Protection Available Online) |          |              |                |                  |                |
| 3Φ<br>240VAC | ACS800-U1-0001-2+P901 | R2    | 1               | 4.7            | 0.75            | 3.5            | Not required                                       |               | 3% built into Drive                       | JLLN-010                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0002-2+P901 | R2    | 1.5             | 6.6            | 1               | 4.6            | Not required                                       |               | 3% built into Drive                       | JLLN-010                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0003-2+P901 | R2    | 2               | 8.1            | 1.5             | 6.6            | Not required                                       |               | 3% built into Drive                       | JLLN-010                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0004-2+P901 | R2    | 3               | 11             | 2               | 7.5            | Not required                                       |               | 3% built into Drive                       | JLLN-015                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0006-2+P901 | R3    | 5               | 21             | 3               | 13             | Not required                                       |               | 3% built into Drive                       | JLLN-025                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0009-2+P901 | R3    | 7.5             | 27             | 5               | 17             | Not required                                       |               | 3% built into Drive                       | JLLN-030                                                        | 3        | LFT30030-3C  | 1              | LFT30030FBC      | 3              |
|              | ACS800-U1-0011-2+P901 | R3    | 10              | 34             | 7.5             | 25             | Not required                                       |               | 3% built into Drive                       | JLLN-040                                                        | 3        | LFT30060-3C  | 1              | LFT30060FBC      | 3              |
|              | ACS800-U1-0016-2+P901 | R4    | 15              | 42             | 10              | 31             | Not required                                       |               | 3% built into Drive                       | JLLN-050                                                        | 3        | LFT30060-3C  | 1              | LFT30060FBC      | 3              |
|              | ACS800-U1-0020-2+P901 | R4    | 20              | 54             | 15              | 42             | Not required                                       |               | 3% built into Drive                       | JLLN-070                                                        | 3        | LFT30100-3CS | 1              | LFT30100FBC      | 3              |
|              | ACS800-U1-0025-2+P901 | R5    | 25              | 69             | 20              | 54             | Not required                                       |               | 3% built into Drive                       | JLLN-090                                                        | 3        | LFT30100-3CS | 1              | LFT30100FBC      | 3              |
|              | ACS800-U1-0030-2+P901 | R5    | 30              | 80             | 25              | 68             | Not required                                       |               | 3% built into Drive                       | JLLN-100                                                        | 3        | LFT30100-3CS | 1              | LFT30100FBC      | 3              |
|              | ACS800-U1-0040-2+P901 | R5    | 40              | 104            | 30              | 80             | Not required                                       |               | 3% built into Drive                       | JLLN-125                                                        | 3        | LFT30200-3CS | 1              | No Cover         |                |
|              | ACS800-U1-0050-2+P901 | R6    | 50              | 132            | 40              | 104            | Not required                                       |               | 3% built into Drive                       | JLLN-175                                                        | 3        | LFT30200-3CS | 1              | No Cover         |                |
|              | ACS800-U1-0060-2+P901 | R6    | 60              | 157            | 50              | 130            | Not required                                       |               | 3% built into Drive                       | JLLN-200                                                        | 3        | LFT30200-3CS | 1              | No Cover         |                |
|              | ACS800-U1-0070-2+P901 | R6    | 75              | 192            | 60              | 154            | Not required                                       |               | 3% built into Drive                       | JLLN-250                                                        | 3        | LFT30400-3CS | 1              | No Cover         |                |
| 3Φ<br>480VAC | ACS800-U1-0004-5+P901 | R2    | 3               | 4.9            | 2               | 3.4            | Not required                                       |               | 3% built into Drive                       | JLLS-010                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0005-5+P901 | R2    | 3               | 6.2            | 2               | 4.2            | Not required                                       |               | 3% built into Drive                       | JLLS-010                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0006-5+P901 | R2    | 5               | 8.1            | 3               | 5.6            | Not required                                       |               | 3% built into Drive                       | JLLS-010                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0009-5+P901 | R2    | 7.5             | 11             | 5               | 8.1            | Not required                                       |               | 3% built into Drive                       | JLLS-015                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0011-5+P901 | R2    | 10              | 14             | 7.5             | 11             | Not required                                       |               | 3% built into Drive                       | JLLS-020                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0016-5+P901 | R3    | 15              | 21             | 10              | 15             | Not required                                       |               | 3% built into Drive                       | JLLS-025                                                        | 3        | LFT60030-3C  | 1              | LFT60030FBC      | 3              |
|              | ACS800-U1-0020-5+P901 | R3    | 20              | 27             | 15              | 21             | Not required                                       |               | 3% built into Drive                       | JLLS-035                                                        | 3        | LFT60060-3C  | 1              | LFT60060FBC      | 3              |
|              | ACS800-U1-0025-5+P901 | R3    | 25              | 34             | 20              | 27             | Not required                                       |               | 3% built into Drive                       | JLLS-040                                                        | 3        | LFT60060-3C  | 1              | LFT60060FBC      | 3              |
|              | ACS800-U1-0030-5+P901 | R4    | 30              | 42             | 25              | 34             | Not required                                       |               | 3% built into Drive                       | JLLS-050                                                        | 3        | LFT60060-3C  | 1              | LFT60060FBC      | 3              |
|              | ACS800-U1-0040-5+P901 | R4    | 40              | 52             | 30              | 37             | Not required                                       |               | 3% built into Drive                       | JLLS-070                                                        | 3        | LFT60100-3CS | 1              | LT60100FBC       | 3              |
|              | ACS800-U1-0050-5+P901 | R5    | 50              | 65             | 40              | 52             | Not required                                       |               | 3% built into Drive                       | JLLS-080                                                        | 3        | LFT60100-3CS | 1              | LT60100FBC       | 3              |
|              | ACS800-U1-0060-5+P901 | R5    | 60              | 79             | 50              | 65             | Not required                                       |               | 3% built into Drive                       | JLLS-100                                                        | 3        | LFT60100-3CS | 1              | LT60100FBC       | 3              |
|              | ACS800-U1-0070-5+P901 | R5    | 75              | 96             | 60              | 77             | Not required                                       |               | 3% built into Drive                       | JLLS-125                                                        | 3        | LFT60200-3CS | 1              | LT60200FBC       | 3              |
|              | ACS800-U1-0100-5+P901 | R6    | 100             | 124            | 75              | 96             | Not required                                       |               | 3% built into Drive                       | JLLS-150                                                        | 3        | LFT60200-3CS | 1              | LT60200FBC       | 3              |
|              | ACS800-U1-0120-5+P901 | R6    | 125             | 157            | 100             | 124            | Not required                                       |               | 3% built into Drive                       | JLLS-200                                                        | 3        | LFT60200-3CS | 1              | LT60200FBC       | 3              |
|              | ACS800-U1-0140-5+P901 | R6    | 150             | 180            | 125             | 156            | Not required                                       |               | 3% built into Drive                       | JLLS-225                                                        | 3        | LFT60400-3CS | 1              | LT60400FBC       | 3              |
|              | ACS800-U1-0205-5+P901 | R6    | 200             | 254            | 150             | 215            | Not required                                       |               | 3% built into Drive                       | JLLS-350                                                        | 3        | LFT60400-3CS | 1              | LT60400FBC       | 3              |

### NOTES

Input Reactors recommended(not required), Input Fuses Required for proper installation

HP<sub>L</sub> = Normal Duty (CT) 110% Overload , HP<sub>H</sub> = Heavy Duty (CT) 150% Overload, @ 40°C (104°F)

FOR 1 MIN EVERY 10 MIN, MAX 50°C (122°F) RATING 1% Derate Per 1°C

Chart Includes all U1 Series VFD including +B054, +B055 & +B056 Versions

### Reactor Enclosures

| Frame | Type      |      | Type       |      |
|-------|-----------|------|------------|------|
| E1    | UL Type 1 | E011 | UL Type 3R | E3R1 |
| E2    | UL Type 1 | E012 | UL Type 3R | E3R2 |
| E3    | UL Type 1 | E013 | UL Type 3R | E3R3 |

Note: Suffix E01 = Nema 1, E3R = Nema 3R



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## ACS800 Output Protective Devices

ALL REACTORS AND DV/DT FILTERS ARE SIZED TO THE HP<sub>L</sub> RATINGS OF THE VFD

| Voltage      |  | Part number           | Frame | HP <sub>L</sub> | A <sub>L</sub> | HP <sub>H</sub> | A <sub>H</sub> | MAXIMUM MOTOR LEAD LENGTH                                                                                                    |  |       |                  |                           |  |                  |                                 |  |
|--------------|--|-----------------------|-------|-----------------|----------------|-----------------|----------------|------------------------------------------------------------------------------------------------------------------------------|--|-------|------------------|---------------------------|--|------------------|---------------------------------|--|
|              |  |                       |       |                 |                |                 |                | 100' MAX, Open Frame (See Table Below For Enclosures)                                                                        |  |       |                  | >101', <1000', Open Frame |  |                  | >101', <1000', Nema 1 Enclosure |  |
|              |  |                       |       |                 |                |                 |                | Part Number                                                                                                                  |  | Frame | Type/Description | Part Number               |  | Type/Description | Part Number                     |  |
| 3Φ<br>240VAC |  | ACS800-U1-0001-2+P901 | R2    | 1               | 4.7            | 0.75            | 3.5            | Output Motor Protection Typically not required for 208-240V Motors, Consult Platt Specialist or Factory If Customer Requires |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0002-2+P901 | R2    | 1.5             | 6.6            | 1               | 4.6            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0003-2+P901 | R2    | 2               | 8.1            | 1.5             | 6.6            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0004-2+P901 | R2    | 3               | 11             | 2               | 7.5            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0006-2+P901 | R3    | 5               | 21             | 3               | 13             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0009-2+P901 | R3    | 7.5             | 27             | 5               | 17             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0011-2+P901 | R3    | 10              | 34             | 7.5             | 25             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0016-2+P901 | R4    | 15              | 42             | 10              | 31             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0020-2+P901 | R4    | 20              | 54             | 15              | 42             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0025-2+P901 | R5    | 25              | 69             | 20              | 54             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0030-2+P901 | R5    | 30              | 80             | 25              | 68             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0040-2+P901 | R5    | 40              | 104            | 30              | 80             |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0050-2+P901 | R6    | 50              | 132            | 40              | 104            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0060-2+P901 | R6    | 60              | 157            | 50              | 130            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |
|              |  | ACS800-U1-0070-2+P901 | R6    | 75              | 192            | 60              | 154            |                                                                                                                              |  |       |                  |                           |  |                  |                                 |  |

|              |                       |    |     |     |     |     |          |    |                |           |              |           |              |
|--------------|-----------------------|----|-----|-----|-----|-----|----------|----|----------------|-----------|--------------|-----------|--------------|
| 480VAC<br>3Φ | ACS800-U1-0004-5+P901 | R2 | 3   | 4.9 | 2   | 3.4 | KDRULA2P | E1 | Output Reactor | V1K6A00   | Dv/DT Filter | V1K6A01   | Dv/DT Filter |
|              | ACS800-U1-0005-5+P901 | R2 | 3   | 6.2 | 2   | 4.2 | KDRULA2P | E1 | Output Reactor | V1K6A00   | Dv/DT Filter | V1K6A01   | Dv/DT Filter |
|              | ACS800-U1-0006-5+P901 | R2 | 5   | 8.1 | 3   | 5.6 | KDRULA3P | E1 | Output Reactor | V1K8A00   | Dv/DT Filter | V1K8A01   | Dv/DT Filter |
|              | ACS800-U1-0009-5+P901 | R2 | 7.5 | 11  | 5   | 8.1 | KDRULA4P | E1 | Output Reactor | V1K12A00  | Dv/DT Filter | V1K12A01  | Dv/DT Filter |
|              | ACS800-U1-0011-5+P901 | R2 | 10  | 14  | 7.5 | 11  | KDRULB1P | E1 | Output Reactor | V1K16A00  | Dv/DT Filter | V1K16A01  | Dv/DT Filter |
|              | ACS800-U1-0016-5+P901 | R3 | 15  | 21  | 10  | 15  | KDRULD1P | E1 | Output Reactor | V1K25A00  | Dv/DT Filter | V1K25A01  | Dv/DT Filter |
|              | ACS800-U1-0020-5+P901 | R3 | 20  | 27  | 15  | 21  | KDRULD2P | E1 | Output Reactor | V1K27A00  | Dv/DT Filter | V1K27A01  | Dv/DT Filter |
|              | ACS800-U1-0025-5+P901 | R3 | 25  | 34  | 20  | 27  | KDRULD3P | E1 | Output Reactor | V1K35A00  | Dv/DT Filter | V1K35A01  | Dv/DT Filter |
|              | ACS800-U1-0030-5+P901 | R4 | 30  | 42  | 25  | 34  | KDRULD4P | E1 | Output Reactor | V1K45A00  | Dv/DT Filter | V1K45A01  | Dv/DT Filter |
|              | ACS800-U1-0040-5+P901 | R4 | 40  | 52  | 30  | 37  | KDRULC1P | E1 | Output Reactor | V1K55A00  | Dv/DT Filter | V1K55A01  | Dv/DT Filter |
|              | ACS800-U1-0050-5+P901 | R5 | 50  | 65  | 40  | 52  | KDRULF1P | E2 | Output Reactor | V1K80A00  | Dv/DT Filter | V1K80A01  | Dv/DT Filter |
|              | ACS800-U1-0060-5+P901 | R5 | 60  | 79  | 50  | 65  | KDRULF2P | E2 | Output Reactor | V1K80A00  | Dv/DT Filter | V1K80A01  | Dv/DT Filter |
|              | ACS800-U1-0070-5+P901 | R5 | 75  | 96  | 60  | 77  | KDRULF3P | E2 | Output Reactor | V1K110A00 | Dv/DT Filter | V1K110A01 | Dv/DT Filter |
|              | ACS800-U1-0100-5+P901 | R6 | 100 | 124 | 75  | 96  | KDRULH1P | E2 | Output Reactor | V1K130A00 | Dv/DT Filter | V1K130A01 | Dv/DT Filter |
|              | ACS800-U1-0120-5+P901 | R6 | 125 | 157 | 100 | 124 | KDRULI1P | E2 | Output Reactor | V1K160A00 | Dv/DT Filter | V1K160A01 | Dv/DT Filter |
|              | ACS800-U1-0140-5+P901 | R6 | 150 | 180 | 125 | 156 | KDRULI2P | E3 | Output Reactor | V1K200A00 | Dv/DT Filter | V1K200A01 | Dv/DT Filter |
|              | ACS800-U1-0205-5+P901 | R6 | 200 | 254 | 150 | 215 | KDRULG1P | E3 | Output Reactor | V1K305A00 | Dv/DT Filter | V1K305A01 | Dv/DT Filter |

### NOTES

For proper motor and lead protection we recommend(not required) units specified above, not using these devices can lead to pin holes in the motor leads and/or motor insulation failure

HP<sub>L</sub> = Normal Duty (CT) 110% Overload , HP<sub>H</sub> = Heavy Duty (CT) 150% Overload, @ 40°C (104°F)

FOR 1 MIN EVERY 10 MIN, MAX 50°C (122°F) RATING 1% Derate Per 1°C

### Reactor Enclosures

| Frame | Type      | Type | Type       |
|-------|-----------|------|------------|
| E1    | UL Type 1 | E011 | UL Type 3R |
| E2    | UL Type 1 | E012 | UL Type 3R |
| E3    | UL Type 1 | E013 | UL Type 3R |

Note: Suffix E01 = Nema 1, E3R = Nema 3R

Chart Includes all U1 Series VFD including +B054, +B055 & +B056 Versions



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## Drive to Motor Lead Length Considerations

For motor leads 100' or less, Output (Load) Reactors may be used.

**Small Machinery Drives (ACS150, ACS310, ACS355) less than 15HP should be sized to next larger size to accommodate motor cable capacitance charging current requirements in leads longer than 100'**

| Flexible Armored THHN Cable |                    |           | Units 35 Amps and below |            |
|-----------------------------|--------------------|-----------|-------------------------|------------|
| Frequency (kHz)             | Cable Leads (Feet) |           |                         |            |
|                             | 100'               | 101'-500' | 501'-1000'              | >1000'     |
| 2                           | V1000-STD          | V1000-STD | V1000-STD               | V1000-EX   |
| 4                           | V1000-STD          | V1000-STD | V1000-STD               | V1000-EX   |
| 6                           | V1000-STD          | V1000-STD | V1000-EX                | MotorGuard |
| 8                           | V1000-STD          | V1000-EX  | MotorGuard              | MotorGuard |

| Flexible Armored THHN Cable |                    |           | Units 45 Amps to 750 Amps |          |
|-----------------------------|--------------------|-----------|---------------------------|----------|
| Frequency (kHz)             | Cable Leads (Feet) |           |                           |          |
|                             | 100'               | 101'-500' | 501'-1000'                | >1000'   |
| 2                           | V1000-STD          | V1000-STD | V1000-STD                 | V1000-EX |
| 4                           | V1000-STD          | V1000-STD | V1000-STD                 | V1000-EX |
| 6                           | V1000-STD          | V1000-STD | V1000-STD                 | V1000-EX |
| 8                           | V1000-STD          | V1000-EX  | V1000-EX                  | V1000-EX |

| Flat Cable or VFD Cable |                    |            | Units 35 Amps and below |            |
|-------------------------|--------------------|------------|-------------------------|------------|
| Frequency (kHz)         | Cable Leads (Feet) |            |                         |            |
|                         | 100'               | 101'-500'  | 501'-1000'              | >1000'     |
| 2                       | V1000-STD          | V1000-STD  | V1000-STD               | V1000-EX   |
| 4                       | V1000-STD          | V1000-STD  | V1000-EX                | MotorGuard |
| 6                       | V1000-STD          | V1000-STD  | MotorGuard              | MotorGuard |
| 8                       | MotorGuard         | MotorGuard | MotorGuard              | MotorGuard |

| Flat Cable or VFD Cable |                    |            | Units 45 Amps to 750 Amps |            |
|-------------------------|--------------------|------------|---------------------------|------------|
| Frequency (kHz)         | Cable Leads (Feet) |            |                           |            |
|                         | 100'               | 101'-500'  | 501'-1000'                | >1000'     |
| 2                       | V1000-STD          | V1000-STD  | V1000-STD                 | V1000-EX   |
| 4                       | V1000-STD          | V1000-STD  | V1000-EX                  | MotorGuard |
| 6                       | V1000-STD          | V1000-EX   | MotorGuard                | MotorGuard |
| 8                       | MotorGuard         | MotorGuard | MotorGuard                | MotorGuard |

### Notes:

All ABB drives are factory set @ 4 kHz

V1000 is a T.C.I. DV/DT Output Filter

V1000-EX is a T.C.I. Heavy Duty Rated DV/DT Output Filter

MotorGuard is the T.C.I. KMG High Performance Output Filter

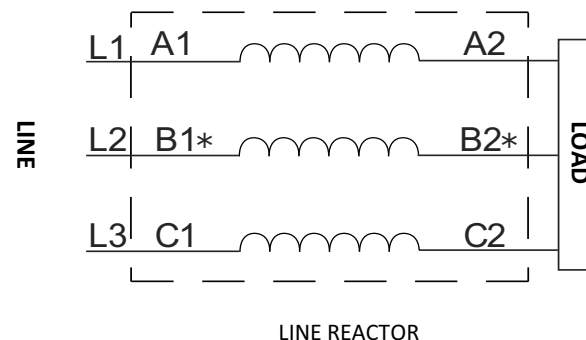
Refer to the Trans-Coil, Inc. catalogs for part numbers, details of product design and their use. <http://www.transcoil.com/>

## Field Wiring Information

Below is the typical wiring diagram for the 3-phase reactor applied to the front end of the Variable Frequency Drive (VFD).

Single-phase applications are acceptable, however, it is important to size the unit based on the single phase Full Load Amperage of the VFD. The input and output connections should be on

### Wiring Diagram



\* For single-phase applications, use coils A and C.  
Isolate terminals B1 and B2

### For Input Reactors

The VFD will be connected to the load side of the reactor. A2, B2, C2 would be connected to U1, V1, W1 of the VFD. When connecting to a single phase input on a ACS150, ACS310, ACS355, connect A2 to U1, C2 to V1, On an ACS550 connect A2 to U1, C2 to W1. Connect Input Fuses

### For Output Reactors & Dv/Dt Filters

The output of the VFD U1, V1, W1 would be connected to A1, B1, C1 of the reactor. The motor would be connected to A2, B2, C2 of the reactor.