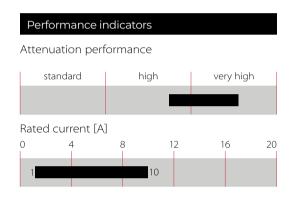


# **High Performance Power Entry Module with Fuses**



- Rated currents up to 10 A
- Integrated dual fuse holder
- Optional reduced leakage current versions (A/B type)
- Complies with IEC/EN 60601-1
- Snap-in versions (S type)
- High attenuation performance
- NEW: Wire leads option





# **Technical Specifications**

| Maximum continuous operating voltage      | 250 VAC, 50/60 Hz   |
|---|---|
| Nominal operating voltage                 | 230 VAC   |
| Rated currents                            | 1 to 10 A @ 40℃   |
| Operating frequency                       | DC to 400 Hz  |
| High potential test voltage               | P -> PE 2000 VAC for 2 sec (standard types)<br>P -> PE 2500 VAC for 2 sec (B types)<br>P -> N 760 VAC for 2 sec |
| Temperature range (operation and storage) | -25°C to +85°C (25/85/21)   |
| Protection category                       | IP 40 according to IEC 60529  |
| Flammability corresponding to             | Fuseholder plastic: UL 94 V-0<br>Inlet plastic: UL 94 V-0   |
| Design corresponding to                   | UL 60939-3, CSA Std C22.2 No. 8-13, IEC/EN 60939-3,<br>GB/T 15287, GB/T 15288                                   |
| MTBF (Mil-HB-217F)                        | >2,100,000 h @ 40°C/230 V   |
| Fuse holder                               | 2 fuses (Ø5 x 20 mm) (certified to IEC 60127-6), power acceptance 1.6W @ Ta 23°C per pole                       |
|   |   |



The FN9262 power entry module combines an IEC inlet, mains filter with very high filter attenuation based on nanocrystalline material selection and fuses in a small form factor. Choosing FN9262 product line brings you rapid availability of a standard filter associated with the necessary safety acceptances. Standard IEC connector filters are a practical solution helping you to pass EMI system approval in a short time. A wide selection on amperage ratings, mounting possibilities and filters for medical applications (acc. to IEC 60601-1 with low leakage current and high performance) are designed to offer you the desired solution.

# **Features and Benefits**

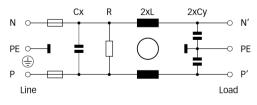
- Exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- FN9262B versions comply with the requirements of 1MOP acc. to IEC/EN 60601-1 for creepage and clearance, leakage current and high potential testing
- Versions up to 10 A are available with fuse holder for two fuses
- Custom-specific versions are available on request

# **Typical Applications**

- Exceptional conducted attenuation performance, based on chokes with high saturation resistance and excellent thermal behavior
- FN9262B versions comply with the requirements of 1MOP acc. to IEC/EN 60601-1 for creepage and clearance, leakage current and high potential testing
- Versions up to 10 A are available with fuse holder for two fuses
- Custom-specific versions are available on request

## Typical electrical schematic

FN 9262 (B types without Y-capacitors)



# **Filter Selection Table**

| Filter            | Rated current | Leakage current*  | Inductance** | Capac | itance** | Resistor** | Output co | nnections | Fuses*** | Weight |
|-------------------|---------------|-------------------|--------------|-------|----------|------------|-----------|-----------|----------|--------|
|                   | @ 40°C        | @ 250 VAC/50 Hz   | L            | Сх    | Су       | R          |           |           |          |        |
|                   |               | (@ 120 VAC/60 Hz) |              |       |          |            |           |           |          |        |
|                   |               |                   |              |       |          |            |           | Ļ         |          |        |
|                   | [A]           | [mA]              | [mH]         | [μF]  | [nF]     | [kΩ]       |           |           | [Qty]    | [g]    |
| FN9262v-1-yy-zz   | 1             | 0.31 (0.18)       | 40           | 0.22  | 2.2      | 1000       | -06       | -07       | 2        | 55     |
| FN9262v-2-yy-zz   | 2             | 0.31 (0.18)       | 20           | 0.22  | 2.2      | 1000       | -06       | -07       | 2        | 55     |
| FN9262v-4-yy-zz   | 4             | 0.31 (0.18)       | 7            | 0.22  | 2.2      | 1000       | -06       | -07       | 2        | 55     |
| FN9262v-6-yy-zz   | 6             | 0.31 (0.18)       | 3            | 0.22  | 2.2      | 1000       | -06       | -07       | 2        | 55     |
| FN9262v-10-yy-zz  | 10            | 0.31 (0.18)       | 1.15         | 0.22  | 2.2      | 1000       | -06       | -07       | 2        | 55     |
|                   |               |                   |              |       |          |            |           |           |          |        |
| FN9262vA-1-yy-zz  | 1             | 0.07 (0.04)       | 40           | 0.22  | 0.47     | 1000       | -06       | -07       | 2        | 55     |
| FN9262vA-2-yy-zz  | 2             | 0.07 (0.04)       | 20           | 0.22  | 0.47     | 1000       | -06       | -07       | 2        | 55     |
| FN9262vA-4-yy-zz  | 4             | 0.07 (0.04)       | 7            | 0.22  | 0.47     | 1000       | -06       | -07       | 2        | 55     |
| FN9262vA-6-yy-zz  | 6             | 0.07 (0.04)       | 3            | 0.22  | 0.47     | 1000       | -06       | -07       | 2        | 55     |
| FN9262vA-10-yy-zz | 10            | 0.07 (0.04)       | 1.15         | 0.22  | 0.47     | 1000       | -06       | -07       | 2        | 55     |
|                   |               |                   |              |       |          |            |           |           |          |        |
| FN9262vB-1-yy-zz  | 1             | 0.00              | 40           | 0.22  |          | 1000       | -06       | -07       | 2        | 55     |
| FN9262vB-2-yy-zz  | 2             | 0.00              | 20           | 0.22  |          | 1000       | -06       | -07       | 2        | 55     |
| FN9262vB-4-yy-zz  | 4             | 0.00              | 7            | 0.22  |          | 1000       | -06       | -07       | 2        | 55     |
| FN9262vB-6-yy-zz  | 6             | 0.00              | 3            | 0.22  |          | 1000       | -06       | -07       | 2        | 55     |
| FN9262vB-10-yy-zz | 10            | 0.00              | 1.15         | 0.22  |          | 1000       | -06       | -07       | 2        | 55     |

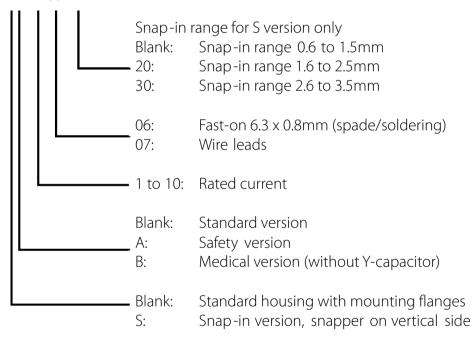
\* Leakage current under normal operating conditions (acc. to IEC60939-3). Note: if the neutral line is interrupted, worst case leakage could reach twice this level.

\*\* Tolerances apply: Inductance: -30/+50%, Capacitance: ±20%, Resistance: ±10%

\*\*\* Fuses are not included in the filter and need to be selected according to application

### Product selector

FN9262vw-xx-yy-zz



For example: FN9262-1-06, FN9262SB-10-06

# **Typical Filter Attenuation**

Per CISPR 17; DM (differential mode)=50  $\Omega$ /50  $\Omega$  sym; CM (common mode)=50  $\Omega$ /50  $\Omega$  asym

FN9262A Type 1 A

## FN9262 Standard Type 1 A

dB

90

80

70

60

50

40

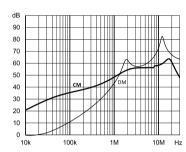
30

20

10

0 ⊾ 10k 10M Hz 100 1M

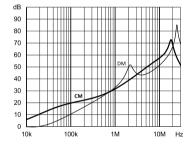
FN9262 Standard Type 2 A



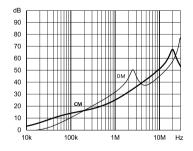
FN9262 Standard Type 4 A

| dB [ |        |        |         |
|------|--------|--------|---------|
| 90   |        | ++++++ |         |
| 80   |        | ++++++ |         |
| 70   |        | ++++++ | HIII /N |
| 60   |        |        |         |
| 50   |        |        |         |
| 40   |        |        |         |
| 30   | СМ     | DM     |         |
| 20   |        |        |         |
| 10   |        |        |         |
| οL   |        |        |         |
| 10   | < 100k | 1M     | 10M Hz  |

FN9262 Standard Type 6 A



FN9262 Standard Type 10 A



dB 90 80 70 60 50 40 30 20 10 0 10M Hz 10 1M 1001

FN9262A Type 2 A

| 10  |   |       |        |
|-----|---|-------|--------|
| dB  |   |       |        |
| 90  |   |       |        |
| 80  | +++++++                                 | +++++ | HIII A |
| 70  | +++++++++++++++++++++++++++++++++++++++ | DM    |        |
| 60  |   |       |        |
| 50  |   |       |        |
| 40  | СМ                                      |       |        |
| 30  |   |       |        |
| 20  |   |       |        |
| 10  |   | +++++ |        |
| 0   |   |       |        |
| 10k | 100k                                    | 1M    | 10M Hz |

FN9262A Type 4 A

| dB [    |   |                  |     | ТП  | Ш            |     | TTTT  |              | - |
|---------|---|------------------|-----|-----|--------------|-----|-------|--------------|---|
| 90      |   | $\left  \right $ |     | +++ |              | +++ | +++++ |              | _ |
| 80      |   |                  |     | +++ |              | +++ |       |              | _ |
| 70      |   |                  |     | +++ |              |     |       |              | ſ |
| 60      |   |                  |     | +++ | DN           |     | +++++ |              | ŀ |
| 50      | _ |                  |     | +++ |              |     |       | $\checkmark$ | _ |
| 40      |   |                  |     | +++ | $\mathbb{H}$ |     |       |              | _ |
| 30      |   |                  | см  | ₩   | Ħ            |     |       | -            |   |
| 20      |   |                  |     | H   |              |     |       |              | _ |
| 10      |   |                  |     |     |              |     |       |              | _ |
| ol      |   | -11              |     |     |              |     |       |              |   |
| ٽ<br>10 | k | 1                | 00k |     | 1M           |     | 10    | M            | F |

FN9262A Type 6 A

| dB  |   |    |        |
|-----|---|----|--------|
| 90  | ++++++                                  |    |        |
| 80  | ++++++                                  |    |        |
| 70  | +++++++++++++++++++++++++++++++++++++++ |    |        |
| 60  | +++++++++++++++++++++++++++++++++++++++ |    |        |
| 50  | +++++++++++++++++++++++++++++++++++++++ | DM |        |
| 40  |   |    |        |
| 30  |   |    |        |
| 20  | СМ                                      |    |        |
| 10  |   |    |        |
| 0   |   |    |        |
| 10k | 100k                                    | 1M | 10M Hz |

FN9262A Type 10 A

| -10 |        |   |        |
|-----|--------|---|--------|
| dB  |        |   |        |
| 90  |        | ++++++                                  |        |
| 80  | ++++++ | +++++++++++++++++++++++++++++++++++++++ |        |
| 70  | ++++++ |   |        |
| 60  | ++++++ |   |        |
| 50  | ++++++ |   |        |
| 40  | ++++++ |   |        |
| 30  |        |   |        |
| 20  |        |   |        |
|     |        | см                                      |        |
| 10  |        |   |        |
| 0   |        |   |        |
| 10k | 100k   | 1M                                      | 10M Hz |

10 0 100

FN9262B Type 1 A

dB

90

80

70

60

50

40

30

20

10

FN9262B Type 2 A

| dB |        |       |              |    |    |          |   |     |   |
|----|--------|-------|--------------|----|----|----------|---|-----|---|
| 90 |        |       |              |    |    |          |   | Ⅲ   |   |
| 80 |        |       |              |    |    |          |   |     |   |
| 70 |        |       |              |    |    |          |   |     |   |
| 60 |        |       |              |    | DN | '₩       |   |     |   |
| 50 |        |       |              |    |    | +        |   | #   | 1 |
| 40 |        |       | СМ           |    | #  | $\frown$ | ч | JI- |   |
| 30 |        |       |              | lЖ |    |          |   |     |   |
| 20 | $\leq$ |       | $\vdash$     | r  |    | ++       |   | ₩   |   |
| 10 |        |       | $\leftarrow$ |    |    | ++       |   |     |   |
| 0  |        | 71111 |              |    |    |          |   |     |   |
| 1  | 0k     | 10    | )0k          |    | 1M |          |   | 10M | H |

1M

10M Hz

FN9262B Type 4 A

| dB  |      |          |        |
|-----|------|----------|--------|
| 90  |      | ++++++   |        |
| 80  |      |          |        |
| 70  |      |          |        |
| 60  |      | DM       |        |
| 50  |      | IIIII /N |        |
| 40  |      |          |        |
| 30  | СМ   |          |        |
| 20  |      |          |        |
| 10  |      |          |        |
| 0   |      |          |        |
| 10k | 100k | 1M       | 10M Hz |
|     |      |          |        |

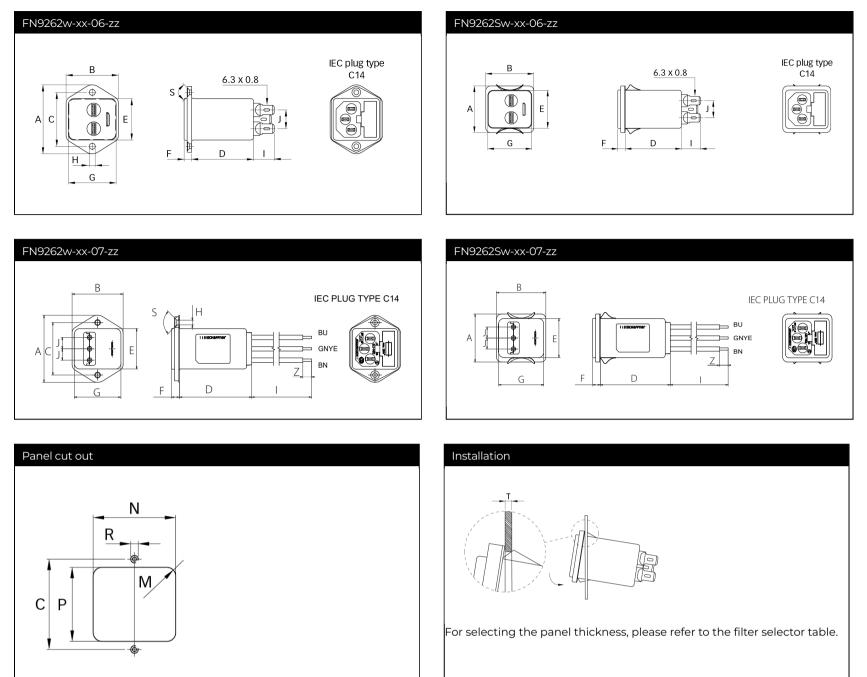
FN9262B Type 6 A

| dB |      |     |      | 1 |
|----|------|-----|------|---|
| 90 |      |     |      |   |
| 80 |      |     |      |   |
| 70 |      |     |      |   |
| 60 |      |     |      |   |
| 50 |      | DM  |      |   |
| 40 |      | / - |      | 1 |
| 30 | СМ   |     |      |   |
| 20 |      |     |      | 1 |
| 10 |      |     |      | 1 |
| 0  | 100% |     | 1014 |   |
|    |      |     |      |   |

FN9262B Type 10 A

| dB  |      |       |        |
|-----|------|-------|--------|
| 90  |      |       |        |
| 80  |      |       |        |
| 70  |      | +++++ |        |
| 60  |      | +++++ | +++++  |
| 50  |      |       | +++++  |
| 40  |      |       |        |
| 30  |      |       |        |
| 20  |      | СМ    |        |
| 10  |      |       |        |
| 0 E |      |       |        |
| 10k | 100k | 1M    | 10M Hz |

# **Mechanical Data**



# Dimensions

|    | FN9262vw-xx-06-zz<br>Fast-On | FN9262vw-xx-07-zz<br>Wire leads** | FN9262Sw-xx-06-zz<br>Fast-On | FN9262Sw-xx-07-zz<br>Wire leads** | Tolerances |
|----|------------------------------|-----------------------------------|------------------------------|-----------------------------------|------------|
| Α  | 46                           | 46                                | 34                           | 34                                | ±0.3       |
| в  | 35                           | 35                                | 35                           | 35                                | ±0.3       |
| С  | 36                           | 36                                |                              |                                   | ±0.3       |
| D  | 41                           | 50                                | 41                           | 50                                |            |
| E  | 27.8                         | 27.8                              | 27.8                         | 27.8                              | +0.3/-0    |
| F  | 5.5                          | 5.5                               | 5.5                          | 5.5                               | ±0.3       |
| G  | 32                           | 32                                | 32                           | 32                                | +0.3/-0    |
| н  | Ø3.2                         | Ø3.2                              |                              |                                   | ±0.1       |
| 1  | 14±0.5                       | 160±5**                           | 14±0.5                       | 160±5**                           |            |
| J  | 12.5                         | 7.8                               | 12.5                         | 7.8                               |            |
| м  | R ≤3.5                       | R ≤3.5                            | R ≤3.5                       | R ≤3.5                            |            |
| Ν  | 33 +0.3/-0                   | 33 +0.3/-0                        | 33 +0.2/-0                   | 33 +0.2/-0                        |            |
| Р  | 29 ±0.3                      | 29 ±0.3                           | 29.5 ±0.2                    | 29.5 ±0.2                         |            |
| R* | M3                           | M3                                |                              |                                   |            |
| s  | 90°                          | 90°                               |                              |                                   |            |
| z  |                              | 6                                 |                              | 6                                 |            |

\*Recommended torque for M3 (90° countersunk flat head) is 0.5 Nm

\*\* 1 A - 6 A - AWG18; 10 A - AWG16

All dimensions in mm; 1 inch = 25.4 mm / Tolerances according: ISO 2768-m/EN 22768-m

Please visit <u>www.schaffner.com</u> to find more details on filter connections.

# Accessories

IL 13P IEC C13 Rewireable Connectors with Locking System



The locking system has a tensile force of typical 300N. It is recommended to use it with flange mount filters. For details refer to our Application Note "Using IEC Lock Power Cords with IEC Inlets and Filters".

Schaffner power connector with IEC lock guard against accidental disconnection of all electrical appliances with an IEC inlet. No exchange or modification of the IEC inlet or IEC inlet filter system is needed. Easy retrofit .for all electronic equipments and devices

# IL 13P IEC C13 Rewireable Angled Connectors with Locking System



- Protects appliances that are vulnerable to vibration
- Connector cannot be accidentally pulled or vibrated out of the inlet
- Space availability/constraints
- Different angles for ease of access
- Space saving
- Release locking mechanism
- Prevents accidental disconnection

# Power Cord with angled Locking System C13



- Protects appliances that are vulnerable to vibration
- Connector cannot be accidentally pulled or vibrated out of the inlet
- Space availability/constraints
- Different angles for ease of access
- Space saving
- Release locking mechanism
- Prevents accidental disconnection

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