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[Schurter](#)

[EF12.0885.2110.01](#)

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[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

IEC Appliance Inlet C20 with Filter, Circuit Breaker TA45 (recessed)

Standard- or Medical-Filter



C20



70° C



### Description

- Panel Mount:  
Screw-on mounting from front side
- 3 Functions:  
Appliance Inlet Protection class I, circuit breaker type TA45  
2-pole, Line filter in standard and medical version
- Quick connect terminals 6.3 x 0.8 mm

### Approvals

- VDE Certificate Number: 40001520
- UL File Number: E72928

### Characteristics

- All single elements are already wired
- Line switch non-illuminated
- With EMC-shield
- Suitable for use in equipment according to IEC/UL 60950
- Suitable for use in medical equipment according to IEC/UL 60601-1

### Other versions on request

- Variant with notch for V-Lock mating Cordsets

### References

Alternative: version without line filter [EF11](#)

Alternative: Standard version

### Weblinks

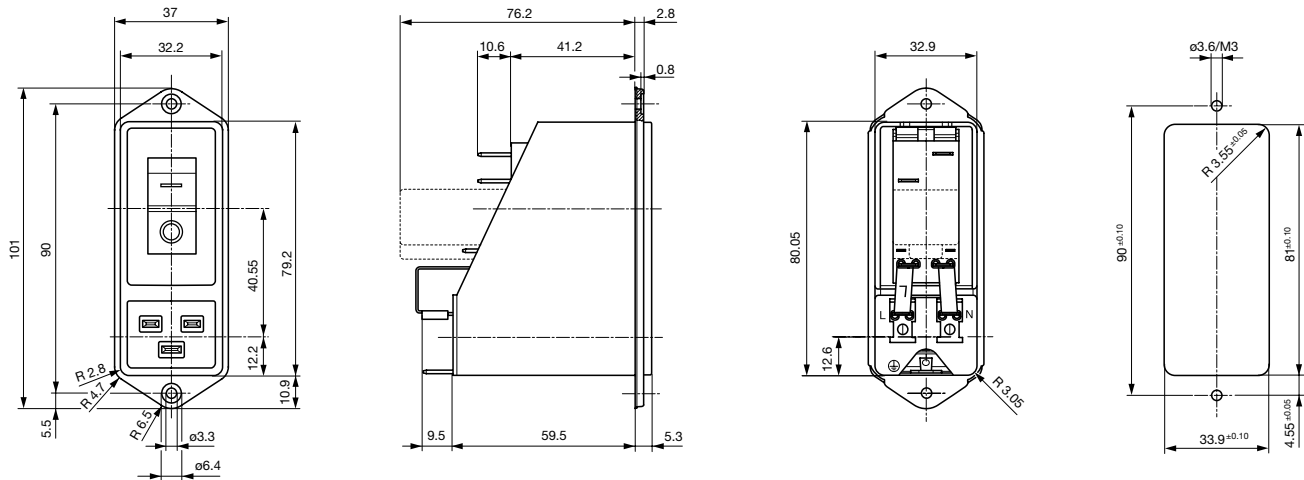
[pdf-datasheet](#), [html-datasheet](#), [General Product Information](#), [RoHS](#), [CHINA-RoHS](#), [REACH](#), [Distributor-Stock-Check](#), [Accessories](#), [Detailed request for product](#)

Newly available variants corresponding to V-Lock mating cordset. The connector is equipped with a notch intended for use with the latching cordset. The cord latching system prevents against accidental removal of the cordset.

### Technical Data

|                           |   |                         |  |
|---------------------------|---|-------------------------|--|
| Ratings IEC               | 12 - 16A @ Ta 40 °C / 250VAC; 50Hz  | Appliance-Inlet/-Outlet | C20 acc. to IEC 60320-1, UL 498, CSA C22.2 no. 42 (for cold conditions) pin-temperature 70 °C, 16A, Protection Class I   |
| Ratings UL/CSA            | 12 - 20A @ Ta 40 °C / 250VAC; 60Hz  | Circuit Breakers        | Acc. IEC/EN 60934, UL 1077, CSA 22.2 no. 235<br>2-pole rocker switch, illuminated or non-illuminated. Optional with undervoltage- or remote trip release<br>Short circuit capacity Icn:<br>at In < 3A/240VAC : 10 x In<br>at In ≥ 3A/240VAC : 300A |
| Leakage Current           | standard < 0.5mA (250V / 60Hz)<br>medical < 5 µA (250 V / 60 Hz)          | Line Switch             | Rocker switch 2-pole, non-illuminated or illuminated, acc. to IEC 61058-1<br><a href="#">Technical Details</a>   |
| Dielectric Strength       | > 1.7kVDC between L-N<br>> 2.7kVDC between L/N-PE<br>Test voltage (2 sec) | Line Filter             | Standard and Medical Version, IEC 60939, UL 1283, CSA C22.2 no. 8<br><a href="#">Technical Details</a>   |
| Allowable Operation Temp. | -10°C to 55 °C  | MTBF                    | > 100'000h acc. to MIL-HB-217 F  |
| Climatic Category         | 10/055/21 acc. to IEC 60068-1   |                         |  |
| Degree of Protection      | from front side IP 40 acc. to IEC 60529                                   |                         |  |
| Protection Class          | Suitable for appliances with protection class I acc. to IEC 61140         |                         |  |
| Terminal                  | Quick connect terminals 6.3 x 0.8 mm                                      |                         |  |
| Panel Thickness s         | Screw: max 8mm<br>Mounting screw torque max 0.5Nm                         |                         |  |
| Material: Housing         | Thermoplastic, black, UL 94V-0  |                         |  |

## Dimensions



\* --- Version TA45 with undervoltage release

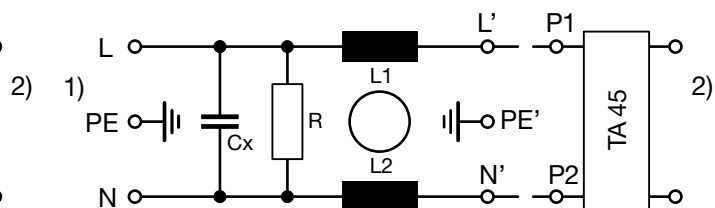
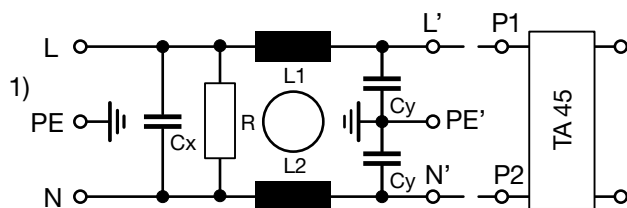
## Technical Data of Filter-Components

| Rated Current [A] | Filter-Type          | Inductances L [mH] | Capacitance CX [nF] | Capacitance CY [nF] | R [M $\Omega$ ] |
|-------------------|----------------------|--------------------|---------------------|---------------------|-----------------|
| 12                | Standard Version     | 2 x 0.8            | 100                 | 2.2                 | 1               |
| 16                | Standard Version     | 2 x 0.6            | 100                 | 2.2                 | 1               |
| 20                | Standard Version     | 2 x 0.3            | 100                 | 2.2                 | 1               |
| 12                | Medical Version (M5) | 2 x 0.8            | 100                 | -                   | 1               |
| 16                | Medical Version (M5) | 2 x 0.6            | 100                 | -                   | 1               |
| 20                | Medical Version (M5) | 2 x 0.3            | 100                 | -                   | 1               |

## Diagrams

Standard version

Medical version (M5)



1) Line  
2) Load

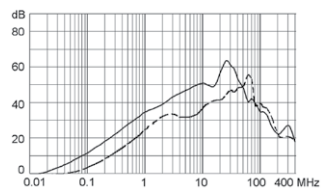
1) Line  
2) Load

**Attenuation Loss**

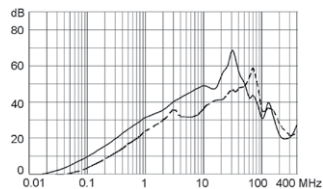
--- 50Ω differential mode    — 50Ω common mode

Standard version

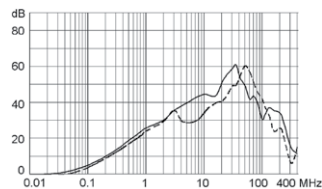
12 A



16 A

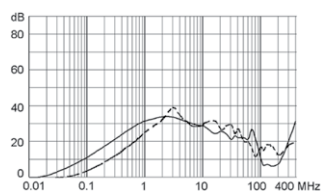


20 A

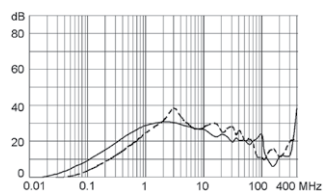


Medical version (M5)

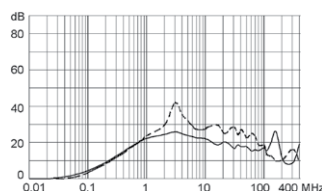
12 A



16 A



20 A



# EF12

## Power Entry Modules with Line Filter

[www.schurter.com/PG06](http://www.schurter.com/PG06)

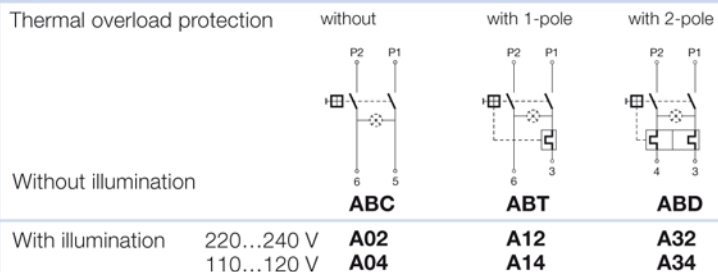
**Table 1 Selection for type TA45**

Order example



- Line switch
- 2-pole, rocker actuated
- Quick connect terminal
- Other types on request

### Diagram



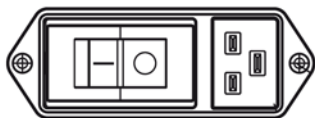
### Colours

| Switch front                                       | Rocker   |
|--|--|
| <b>W</b> black<br><b>B</b> black<br><b>6</b> black | <div> <div>white</div> <div>black</div> <div>—</div> </div> <div> <div>—</div> <div>—</div> <div>orange transp.</div> </div> |

### Rocker legend

| Surface           | Illustration | Colour of print | Surface          | Illustration | Colour of print |
|-------------------|--------------|-----------------|------------------|--------------|-----------------|
| <b>F</b> embossed |              | white           | <b>M</b> printed |              | black           |
| <b>H</b> printed  |              | white           | <b>P</b> printed |              | white           |
| <b>K</b> printed  |              | black           | <b>R</b> printed |              | black           |
| <b>L</b> printed  |              | white           |                  |              |                 |

Position of the rocker legend  
e.g F



### Rated current:

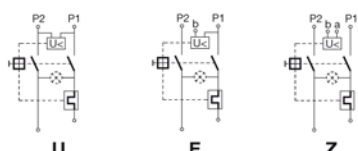
- Without thermal overload protection: code C00 }  $I_n = 20 \text{ A}$
- With thermal overload protection: rated current  $I_n \text{ (A)}$

| $I_n$ | Code       | $I_n$ | Code       | $I_n$ | Code       | $I_n$ | Code       |
|-------|------------|-------|------------|-------|------------|-------|------------|
| 10,0  | <b>100</b> | 13,0  | <b>130</b> | 16,0  | <b>160</b> | 19,0  | <b>190</b> |
| 11,0  | <b>110</b> | 14,0  | <b>140</b> | 17,0  | <b>170</b> | 20,0  | <b>200</b> |
| 12,0  | <b>120</b> | 15,0  | <b>150</b> | 18,0  | <b>180</b> |       |            |

Other rated currents on request

### Without release: code C0

#### Undervoltage release



|   |   |   |
|---|---|---|
| • | • | • |
| • | • | • |
| • | • | • |

#### Remote trip release



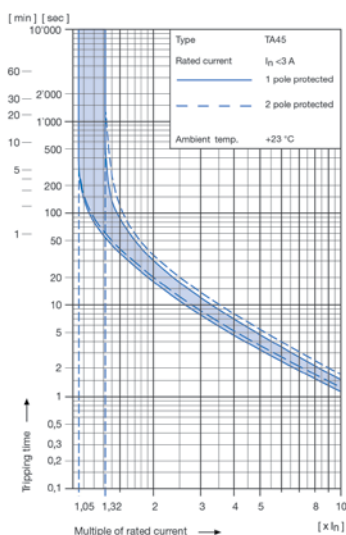
| Code     | Rated voltage $U_n$ |
|----------|---------------------|
| <b>2</b> | 240 V AC            |
| <b>3</b> | 230 V AC            |
| <b>4</b> | 120 V AC            |

## Technical data (continued)

### Circuit breaker

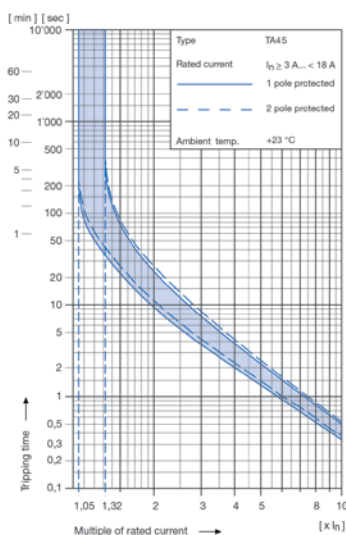
Tripping characteristics

$I_n < 3 \text{ A}$



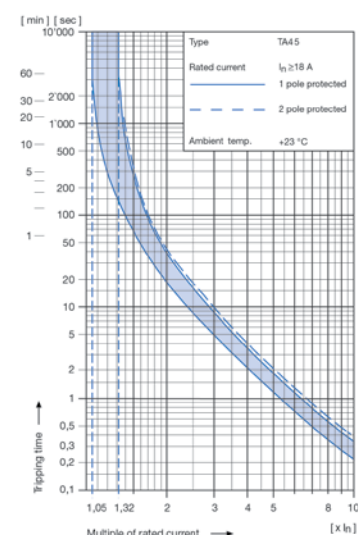
Tripping characteristics

$I_n \geq 3 \dots < 18 \text{ A}$



Tripping characteristics

$I_n \geq 18 \text{ A}$



### 1) Effect of ambient temperature

The unit is calibrated for an ambient temperature of +23 °C. To determine the rated current for a lower or higher ambient temperature, use a correction factor from the table on the right side:

| * Ambient temperature [°C] | Correction factor |
|----------------------------|-------------------|
| -10                        | 0,89              |
| -5                         | 0,91              |
| 0                          | 0,92              |
| +23                        | 1,00              |
| +30                        | 1,03              |
| +40                        | 1,08              |
| +55                        | 1,16              |

\* Temperature must be measured at the rear of the breaker next to the terminals after equipment operating temperature has been reached.

### 1) Example

|  |                           |
|--|---------------------------|
| Rated current at +23 °C                            | 6,0 A                     |
| Ambient temperature                                | +40 °C                    |
| Correction factor                                  | 1,08                      |
| Chosen rated current at +40 °C ambient temperature | <b>6 A x 1,08 = 6,5 A</b> |

### Order code for EF12 (order example)

| Type  | Order code TA45<br>(2-pole rocker-switch<br>without accessories) |
|-------|--|
| EF12. | <b>A B T W F 1 5 0 C 0 .</b><br>see table 1                      |

**11 10.01**

- Wiring**  
1 = wired
- Protection class**  
0 = Class I, housing black
- Panel mount / V-Lock**  
0 = Screw-on version  
1 = Screw-on version with V-Lock
- Terminals**  
1 = Quick connect terminals 6,3 x 0,8 mm
- Line filter version**  
1 = standard  
2 = medical
- Line filter, rated current**  
1 = 20 A, 2 = 16 A, 3 = 12 A

Please note that Schurter will establish an internal new part number for logistical use in addition to the order code. The format of this internal part number is, for example EF12.xxxx.1110.01

### Application note

The rated current of the line filter must be equal or higher than the rated current of the circuit-breaker

### Other versions on request

- Rocker switch illuminated

## Variants

| Circuit Breakers  |               |                 |                | Filter            |                      | Connectors       |        | Internally wired | Config. Code            | Order Number      |
|-------------------|---------------|-----------------|----------------|-------------------|----------------------|------------------|--------|------------------|-------------------------|-------------------|
| Rated Current [A] | Rocker colour | Illumination    | Add-on modules | Rated Current [A] | Filter Type          | Protection Class | V-Lock |                  |                         |                   |
| 12                | black         | non-illuminated | -              | 12                | Standard Version     | I                |        | prewired         | EF12.ABDWF120C0.3110.01 | EF12.1034.3110.01 |
| 15                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABDBL150C0.1110.01 | EF12.1089.1110.01 |
| 15                | black         | non-illuminated | -              | 16                | Standard Version     | I                |        | prewired         | EF12.ABDWF150C0.2110.01 | EF12.0885.2110.01 |
| 16                | black         | non-illuminated | -              | 16                | Standard Version     | I                |        | prewired         | EF12.ABDBL160C0.2110.01 | EF12.2105.2110.01 |
| 16                | black         | non-illuminated | -              | 16                | Standard Version     | I                |        | prewired         | EF12.ABDWF160C0.2110.01 | EF12.0699.2110.01 |
| 16                | black         | non-illuminated | -              | 16                | Standard Version     | I                |        | prewired         | EF12.ABTBP160C0.2110.01 | EF12.3103.2110.01 |
| 16                | black         | non-illuminated | -              | 16                | Standard Version     | I                |        | prewired         | EF12.ABTWF160C0.2110.01 | EF12.0034.2110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.A126K200C0.1110.01 | EF12.3197.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.A326K200C0.1110.01 | EF12.2561.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABDBL200C0.1110.01 | EF12.2196.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABDWF200C0.1110.01 | EF12.0572.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABDWM200C0.1110.01 | EF12.2961.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABTWF200C0.1110.01 | EF12.0035.1110.01 |
| 20                | black         | non-illuminated | -              | 20                | Standard Version     | I                |        | prewired         | EF12.ABTWF200U2.1110.01 | EF12.1164.1110.01 |
| 16                | black         | non-illuminated | -              | 16                | Medical Version (M5) | I                |        | prewired         | EF12.ABDWF160C0.2210.01 | EF12.0699.2210.01 |
| 20                | black         | non-illuminated | -              | 20                | Medical Version (M5) | I                |        | prewired         | EF12.ABTWF200C0.1210.01 | EF12.0035.1210.01 |

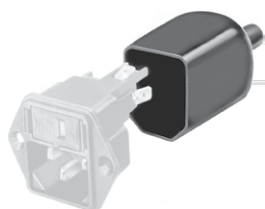
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Availability for all products can be searched real-time: <http://www.schurter.com/Stock-Check/Stock-Check-SCHURTER>

Packaging unit 16 Pcs

## Accessories

## Description



Assorted Covers  
Rear Cover

0859.0109



Cord retaining kits  
Cord retaining strain relief

Flat head, Z  
Flat head, H

0888.0021

4700.0008

## Mating Outlets/Connectors

### Category / Description

[Connector Overview complete](#)



|   |       |
|---|-------|
| IEC Connector C19, Rewireable, Straight | 4795  |
| IEC Connector C19, Rewireable, Angled   | 4790  |
| IEC Connector C19, Rewireable, Straight | 0104U |

[Connector further types to EF12](#)

## Mating Outlets/Connectors shuttered

[Power Cord Overview complete](#)



|  |         |
|--|---------|
| Overview Power Cord with IEC Appliance Connector C19, V-Lock, straight | VAC19KS |
|--|---------|

[Power Cord further types to EF12](#)