# Product datasheet

Specifications



## Circuit breaker, MasterPacT MTZ1 16H1 drawout, 3P, 1600A, 42kA/ 440VAC, MicroLogic 2.0E Active, manually operated, horizontal connections

MTZ116_H12E3PMDHH

## Main

| | |
|---|---|
| **Range** | MasterPacT |
| **Product name** | MasterPacT MTZ1 Active |
| **Product or component type** | Circuit breaker |
| **Device short name** | MTZ1 16 H1 |
| **Device application** | Power distribution |
| **Poles description** | 3P |
| **Protected poles description** | 3P 3d |
| **[In] rated current** | 1600 A at 40 °C |
| **Performance type** | H1 42 kA 415 V AC |
| **[Ue] rated operational voltage** | 690 V AC 50/60 Hz |
| **Suitability for isolation** | Yes conforming to EN/IEC 60947-2 |
| **Selectivity category** | Category B |
| **Control type** | Manually operated<br>ON/OFF push-button |
| **Mounting mode** | Drawout |
| **Trip unit name** | MicroLogic Active 2.0 E |
| **Trip unit technology** | Electronic |
| **Trip unit protection functions** | LI |
| **Sensor rating** | 800 A<br>1000 A<br>1250 A<br>1600 A |

## Complementary

| | |
|---|---|
| **[Icu] rated ultimate short-circuit breaking capacity** | 42 kA at 220/415 V AC 50/60 Hz<br>42 kA at 440 V AC 50/60 Hz<br>42 kA at 525 V AC 50/60 Hz<br>42 kA at 690 V AC 50/60 Hz |
| **[Ics] rated service short-circuit breaking capacity** | 42 kA at 220/415 V AC 50/60 Hz<br>42 kA at 440 V AC 50/60 Hz<br>42 kA at 525 V AC 50/60 Hz<br>42 kA at 690 V AC 50/60 Hz |
| **[Icw] rated short-time withstand current** | 42 kA 0.5 s<br>42 kA 1 s<br>24 kA 3 s |

Price is “List Price” and may be subject to a trade discount – check with your local distributor or retailer for actual price.

Disclaimer: This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications

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|---|---|
| **[Icm] rated short-circuit making capacity** | 88 kA at 220/415 V AC 50/60 Hz<br>88 kA at 440 V AC 50/60 Hz<br>88 kA at 525 V AC 50/60 Hz<br>88 kA at 690 V AC 50/60 Hz |
| **[Ui] rated insulation voltage** | 1000 V AC 50/60 Hz |
| **[Uimp] rated impulse withstand voltage** | 12 kV |
| **Power dissipation in W** | 460 W |
| **Power dissipation per pole** | 153.3 W |
| **Maximum breaking time** | 25 ms |
| **Maximum closing response time** | 50 ms |
| **Mounting support** | Base plate<br>Rails |
| **Upside connection** | Horizontal<br>Rear |
| **Downside connection** | Horizontal<br>Rear |
| **Mechanical durability** | 12500 cycles with maintenance |
| **Electrical durability** | 6000 cycles 440 V AC 50/60 Hz conforming to EN/IEC 60947-2<br>3000 cycles 690 V AC 50/60 Hz conforming to EN/IEC 60947-2 |
| **Protection type** | Overload protection (long time) conforming to ANSI 49<br>Instantaneous short-circuit protection conforming to ANSI 50 |
| **Trip unit rating** | 250 A<br>400 A<br>630 A<br>800 A<br>1000 A<br>1250 A<br>1600 A<br>2000 A<br>2500 A<br>3200 A<br>4000 A<br>5000 A<br>6300 A |
| **Long-time pick-up adjustment type Ir (thermal protection)** | Adjustable |
| **[Ir] long-time protection pick-up adjustment range** | 0.4...1 x In adjustable in step of 1 A |
| **Long-time protection delay adjustment type tr** | Adjustable in step of 0.5 s |
| **[tr] long-time protection delay adjustment range** | 0.5…24 s at 6 x Ir |
| **Thermal memory** | Yes |
| **Instantaneous protection pick-up adjustment type Ii** | Adjustable |
| **[Ii] instantaneous protection pick-up adjustment range** | 1.5...10 x Ir adjustable in step of 0.1 x Ir |
| **[Ii mode] instantaneous delay adjustment range** | 20 ms in standard |
| **Earth-leakage protection** | Without |
| **Zone selective interlocking ZSI** | Without |

| | |
|---|---|
| **Network and machine diagnosis type** | System (HMI) health state overview: circuit breaker health state<br>Contacts state: circuit breaker health state<br>MicroLogic service life: circuit breaker health state<br>Tripping cause indication: circuit breaker tripping cause<br>Identification card: diagnostic data<br>Configured alarms synthesis: diagnostic data<br>Monitored function: diagnostic data<br>Operation: diagnostic data<br>MicroLogic test: test<br>Protection test: test<br>Selectivity test: test<br>Trip context information: crisis management<br>Operation: advanced diagnostic<br>Breaker service life: circuit breaker health state |
| **Type of measurement** | Energy meter<br>Ammeter |
| **Energy management** | Measurement ,active, reactive and apparent energy<br>Measurement ,electrical network<br>Measurement ,energy |
| **Metering type** | Current I1, I2, I3, Iavg RMS<br>Voltage V12, V23, V31, VLLavg RMS<br>Active power P, P1, P2, P3 total<br>Active energy Ep IN/OUT/tot<br>Power factor<br>Demand current I1, I2, I3, In, Iavg<br>Frequency<br>Phase sequence<br>Unbalance current |
| **Measurement voltage** | 208…828 V AC 50/60 Hz phase to phase |
| **Frequency measurement range** | 40…70 Hz |
| **Measurement accuracy** | Current I1, I2, I3, Iavg, Idemand for MTZ1: +/- 1.5 % 40...1600 x 1.2 A<br>Voltage V12, V23, V31, VLLavg: +/- 0.5 % 208...690 x 1.2 V<br>Active power P, P1, P2, P3, Pdemand: +/- 2 %<br>Active energy Ep IN/OUT/tot: +/- 2 %<br>Power factor: +/- 2 %<br>Frequency: +/- 0.005 Hz<br>Unbalance current: +/- 0.5 % |
| **Accuracy class** | Class 0.5: unbalance voltage |
| **Display type** | LCD display - 320 x 240 pixels |
| **Local signalling** | 2 LEDs for trip causes<br>3 LEDs for status indication |
| **Communication port protocol** | NFC peer to peer 28800 bauds conforming to ISO 15963<br>USB peer to peer 115 kbauds |
| **Data recording** | Data logs<br>Event logs<br>Alarm logs<br>Time stamping<br>Maintenance logs<br>Min/max of instantaneous values |
| **End user smartphone application** | EcoStruxure Power Commission<br>EcoStruxure Power Device |
| **Width (W)** | Drawout circuit breaker with chassis: 288 mm<br>Drawout circuit breaker without chassis: 236 mm |
| **Height (H)** | Drawout circuit breaker with chassis: 322 mm<br>Drawout circuit breaker without chassis: 259 mm |
| **Depth (D)** | Drawout circuit breaker with chassis: 291 mm<br>Drawout circuit breaker without chassis: 223 mm |
| **Net weight** | 30 kg |

# Environment

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|---|---|
| **Standards** | EN/IEC 60947-1<br>EN/IEC 60947-2 |
| **Product certifications** | CE<br>CCC<br>EAC |
| **IP degree of protection** | IP3X conforming to EN/IEC 60529 |
| **IK degree of protection** | IK07 conforming to EN/IEC 62262 |
| **Pollution degree** | 3 conforming to EN/IEC 60664-1 |
| **Ambient air temperature for operation** | -25…70 °C |
| **Temperature derating table** | 40 °C ( 1600 A )<br>45 °C ( 1560 A )<br>50 °C ( 1520 A )<br>55 °C ( 1480 A )<br>60 °C ( 1440 A )<br>65 °C ( 1400 A )<br>70 °C ( 1360 A ) |
| **Ambient air temperature for storage** | -40…85 °C |
| **Relative humidity** | 0…95 % conforming to IEC 60068-2-30 |
| **Operating altitude** | 0...2000 m without derating<br>2000 m...5000 m with derating factor |

## Packing Units

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|---|---|
| **Unit Type of Package 1** | PCE |
| **Number of Units in Package 1** | 1 |
| **Package 1 Height** | 66 cm |
| **Package 1 Width** | 60 cm |
| **Package 1 Length** | 80 cm |
| **Package 1 Weight** | 51 kg |

## Contractual warranty

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|---|---|
| **Warranty (in months)** | 18 |

## Environmental Data

Schneider Electric aims to achieve Net Zero status by 2050 through supply chain partnerships, lower impact materials, and circularity via our ongoing “Use Better, Use Longer, Use Again” campaign to extend product lifetimes and recyclability.

Environmental Data explained >

How we assess product sustainability >

### Environmental footprint

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|---|---|
| Total lifecycle Carbon footprint | **2 821 kg CO2 eq.** |
| Carbon footprint of the manufacturing phase [A1 to A3] | **232 kg CO2 eq.** |
| Carbon footprint of the distribution phase [A4] | **6 kg CO2 eq.** |
| Carbon footprint of the installation phase [A5] | **12 kg CO2 eq.** |
| Carbon footprint of the use phase [B2, B3, B4, B6] | **2 495 kg CO2 eq.** |
| Carbon footprint of the end-of-life phase [C1 to C4] | **76 kg CO2 eq.** |
| Environmental Disclosure | **Product Environmental Profile** |

## Use Better

### Materials and Substances

| | |
|---|---|
| Packaging made with recycled cardboard | **Yes** |
| Packaging without single use plastic | **No** |
| SCIP Number | **16fac76b-9b6f-4616-9270-c1fea4a5e42c** |
| EU RoHS Directive | **Compliant By Exemption** |
| REACh Regulation | **Reference contains Substances of Very High Concern above the threshold** |
| Halogen-free status | **Product contains halogen above thresholds** |
| PVC free | **No** |
| Silicone-free | **No** |

## Use Again

### Repack and remanufacture

| | |
|---|---|
| Recyclability potential, in % | **90** |
| End of life manual availability | **End of Life Information** |
| Removable battery | **User replaceable** |
| Take-back | **No** |