

Mini Panel Board

Cost-effective, space-saving board
up to 400A



- XBoard Consumer Units
- XPole Miniature Circuit Breakers, RCDs and RCBOs
- A + B Type Distribution Boards
- Mini Panel Boards**
- Panel Boards

Product Catalogue and
Selection Guide

Mini Panel Board

Miniature Circuit Breakers

Moulded Case Circuit Breakers

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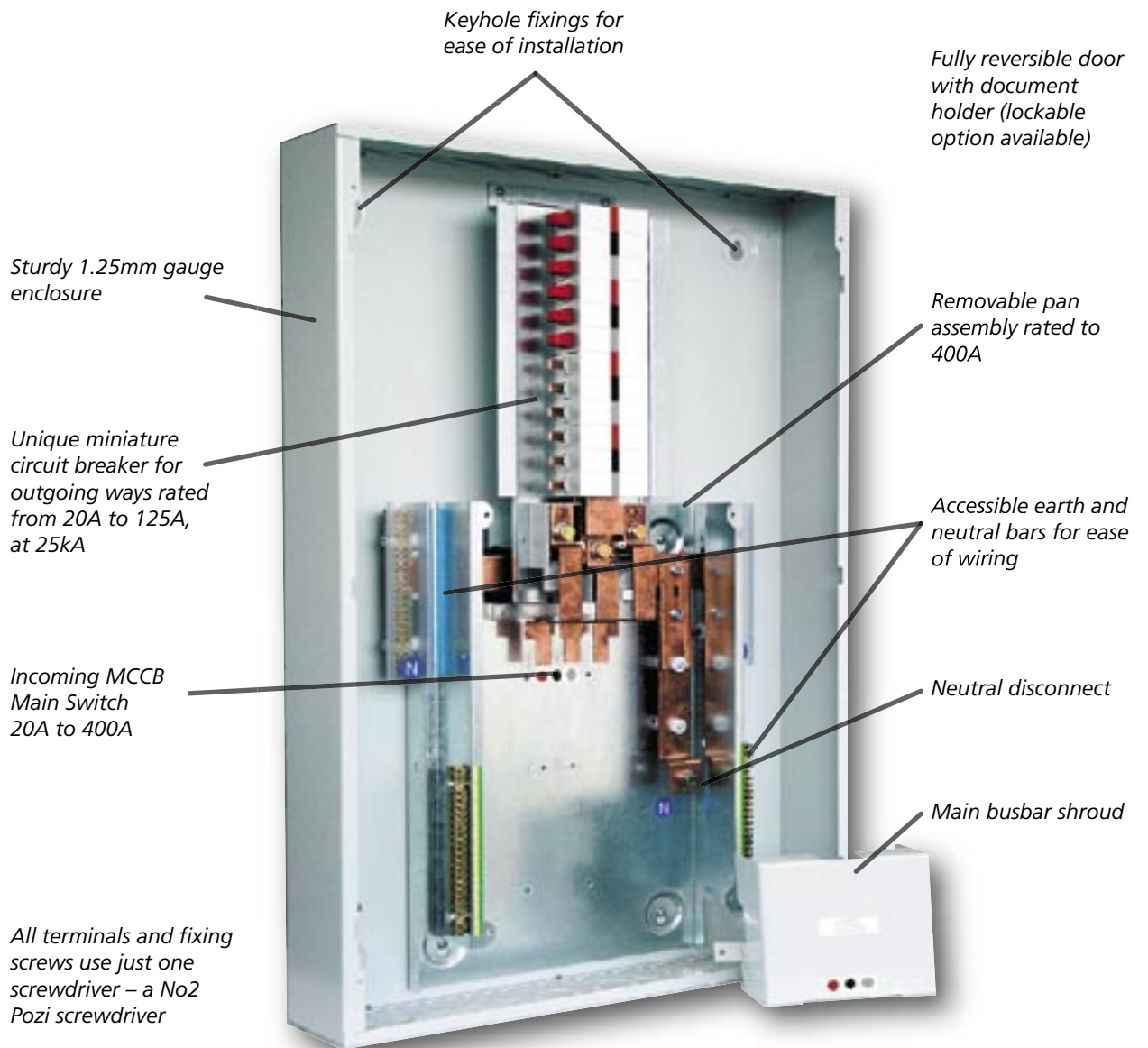


Think future. Switch to green.

Mini Panel Board

The Mini Panel Board is a highly innovative new board featuring a pan assembly rated to 400A. It offers a cost effective and compact alternative to a traditional, assembled panel board, and is well suited to commercial and industrial applications. As part of Moeller's comprehensive range of

consumer units, A + B type boards and panel boards, the Mini Panel Board has been developed to meet the needs of UK specifiers, electrical contractors and distributors to the latest British, European and international standards.



Available with spreader box to meet larger cable requirements



Modular service box to house automation, control devices and metering packs

Mini Panel Boards

Three Phase with 400A Busbar

| Number of Outgoing Ways | Part Number | Height (mm) | Width (mm) | Depth (mm) |
|-------------------------|-------------|-------------|------------|------------|
| 4 | FG-LH-04 | 960 | 610 | 200 |
| 8 | FG-LH-08 | 960 | 610 | 200 |
| 12 | FG-LH-12 | 1290 | 610 | 200 |
| 16 | FG-LH-16 | 1290 | 610 | 200 |



Incoming Devices – 3 Pole

| Rated Current (A) | Moulded Case Circuit Breaker | Switch Disconnecter |
|-------------------|------------------------------|---------------------|
| 160 | PMC2-160/3 | PSC2-160/3 |
| 200 | PMC2-200/3 | PSC2-200/3 |
| 250 | PMC2-250/3 | PSC2-250/3 |
| 300 | PMC3-300/3 | PSC3-300/3 |
| 400 | PMC3-400/3 | PSC3-400/3 |



Note: PMC3/PSC3 must be used in conjunction with FG-LH/INC400 (below)

Incomer Enclosure

supplied complete with shrouds and copper links

| For use with | Part Number | Height (mm) | Width (mm) | Depth (mm) |
|------------------|--------------|-------------|------------|------------|
| PMC3-* or PSC3-* | FG-LH/INC400 | 340 | 610 | 200 |



Outgoing Devices – Miniature Circuit Breakers PLHT

Thermomagnetic release, switching capacity up to 25kA at 415 50/60Hz

| Poles | Rated Current (A) | B Type | C Type | D Type |
|--------|-------------------|-------------|-------------|-------------|
| 1-Pole | 20 | PLHT-B20 | PLHT-C20 | PLHT-D20 |
| | 25 | PLHT-B25 | PLHT-C25 | PLHT-D25 |
| | 32 | PLHT-B32 | PLHT-C32 | PLHT-D32 |
| | 40 | PLHT-B40 | PLHT-C40 | PLHT-D40 |
| | 50 | PLHT-B50 | PLHT-C50 | PLHT-D50 |
| | 63 | PLHT-B63 | PLHT-C63 | PLHT-D63 |
| | 80 | PLHT-B80 | PLHT-C80 | PLHT-D80 |
| | 100 | PLHT-B100 | PLHT-C100 | PLHT-D100 |
| | 125 | PLHT-B125 | PLHT-C125 | – |
| 3-Pole | 20 | PLHT-B20/3 | PLHT-C20/3 | PLHT-D20/3 |
| | 25 | PLHT-B25/3 | PLHT-C25/3 | PLHT-D25/3 |
| | 32 | PLHT-B32/3 | PLHT-C32/3 | PLHT-D32/3 |
| | 40 | PLHT-B40/3 | PLHT-C40/3 | PLHT-D40/3 |
| | 50 | PLHT-B50/3 | PLHT-C50/3 | PLHT-D50/3 |
| | 63 | PLHT-B63/3 | PLHT-C63/3 | PLHT-D63/3 |
| | 80 | PLHT-B80/3 | PLHT-C80/3 | PLHT-D80/3 |
| | 100 | PLHT-B100/3 | PLHT-C100/3 | PLHT-D100/3 |
| | 125 | PLHT-B125/3 | PLHT-C125/3 | – |



Accessories

| Description / Used for | Part Number |
|------------------------|----------------|
| Glazed Door | |
| for FG-LH-04,08 | FG-LH-GD-4/8 |
| for FG-LH-12,16 | FG-LH-GD-12/16 |



| Spreader Boxes | | Dimensions (mm) | | |
|----------------|------------------------------|-----------------|-------|-------|
| | | height | width | depth |
| | for FG-LH-* Mini Panel Board | 340 | 610 | 130 |



| Modular Service Box | | Dimensions (mm) | | |
|---------------------|----------------------|-----------------|-------|-------|
| | | height | width | depth |
| | 19" Modular DIN rail | 340 | 610 | 130 |



| Terminal Extension Adapters | |
|-----------------------------------|--------------|
| to 35mm ² (pack of 10) | FG-KLA/ZB-35 |
| to 50mm ² (pack of 10) | FG-KLA/ZB-50 |



| Accessories for FG-LH-* | |
|---------------------------------|-------------|
| Lock and key | FG-DOORLOCK |
| Busbar tag shrouds (pack of 20) | FG-BTS |
| Blanking strips (6 modules) | AP-45-W |



Cable Lugs required as standard

| Cable size (mm ²) | For use with | Poles | Part Number |
|-------------------------------|--------------|-------|-------------|
| 95 | PMC/PSC2 | 3 | KS95-NZM7 |
| 120 | PMC/PSC2 | 3 | KS120-NZM7 |
| 150 | PMC/PSC2 | 3 | KS150-NZM7 |
| 185 | PMC/PSC2 | 3 | NZM2-XKS185 |
| 185 | PMC/PSC3 | 3 | NZM3-XKS185 |
| 240 | PMC/PSC3 | 3 | NZM3-XKS240 |



Note: Order 3 off for 3-pole.

Box Terminals copper cable, stranded

| For use with | Poles | Terminal Capacity | I _n (A) | Part Number |
|--------------|-------|-----------------------------|--------------------|--------------|
| PMC/PSC2 | 3 | 1 x (4–16) + 2 x (4–16) | 160 | NZM2-160-XKC |
| PMC/PSC2 | 3 | 1 x (25–185) + 2 x (25–70) | 250 | NZM2-250-XKC |
| PMC/PSC3 | 3 | 1 x (35–240) + 2 x (16–120) | 500 | NZM3-XKC |



Technical Data

Mini Panel Board – Three Phase with 400A Busbar

| General | |
|--|--|
| Incoming Options | 3 Pole MCCB, 3 Pole Switch Disconnecter |
| Applicable Standard | BS EN 60439-1: 1994 |
| Technical Data – Electrical | |
| Busbar Nominal Rating | 400A |
| Busbar Short Circuit withstand | 40kA for 0.5s, 25kA for 1s |
| Rated Voltage U_e | 415V AC 50/60Hz |
| Maximum Incomer Rating | 400A |
| Maximum Outgoing Device | 125A |
| Safety Class | I |
| Electromagnetic compatibility | Environment 1 |
| Maximum amount of heat to be dissipated* | * Calculated regarding IEC 890 |
| FG-LH-04 | 148W |
| FG-LH-08 | 148W |
| FG-LH-12 | 123W |
| FG-LH-16 | 123W |
| Technical Data – Mechanical | |
| Ingress Protection | IP40 when the door is closed, IP30 when the door is open, IP2X without cover plate |
| Paint Finish | RAL 7035 textured, epoxy powder coated |
| Limits of Operation | 40°C ambient 50% RH |
| Enclosure Steel Gauge | 1.5mm |
| Gland Plate | 1 blank and 1 with knockouts |
| Maximum Cable Capacity | |
| Neutral Bar | 25mm ² * |
| Earth Bar | 25mm ² * |
| | * 35mm ² with adaptor (FG-KLA/ZB-35), 50mm ² with adaptor (FG-KLA/ZB-50) |
| Main Earth Termination | 150mm ² |
| Main Neutral Termination | 150mm ² |
| Material | |
| Plastic Parts | |
| Support for busbar | Noryl SE1 |
| Cover for busbar | PVC grey |
| Cover for neutral wire | PVC transparent |
| Hinge roller | Polyamide |
| Rotary lever lock | Polyamide |
| Metal Parts | |
| Console for devices | ST 37 1.00mm galvanized |
| Casing | ST 37 1.25mm |
| Lid | ST 37 1.25mm |
| Door | ST 37 1.25mm |
| Mounting plate | ST 37 1.5mm |
| Busbar copper | E-Cu 58 |
| Neutral and earth busbar | MS 58 |
| Screws | Galvanized and passivated |
| Environmental Conditions | |
| Ambient temperature | -5 to +40°C |
| Average ambient temperature over 24 hours | 35°C |
| Relative air humidity | 50% at 40°C |

Technical Data

Moulded Case Circuit Breakers – PMC

| General | | | | | |
|---|---|-----------------|-----------------------------|------------------------------|------|
| Standards | IEC/EN 60947, VDE 0660 | | | | |
| Protection against direct contact | Finger and back-of-hand proof to VDE 0160 part 100 | | | | |
| Climatic proofing | Damp heat, constant, to IEC 60068-2-78, Damp heat, cyclic, to IEC 60068-2-30 | | | | |
| Ambient temperature | -25°C / +70°C | | | | |
| Mechanical shock resistance | 20g (half-sinusoidal shock 20ms) | | | | |
| Safe isolation to VDE 0106 part 101 & 101/A1 | Between auxiliary contacts and main circuits: 500V AC · Between the auxiliary contacts: 300V AC | | | | |
| Direction of incoming supply | As required | | | | |
| | | | PMC2-... | PMC3-... | |
| Rated impulse withstand voltage | Main contacts | U_{imp} (V) | 8000 | 8000 | |
| | Auxiliary contacts | U_{imp} (V) | 6000 | 6000 | |
| Rated operational voltage | | U_e (VAC) | 690 | 690 | |
| Rated insulation voltage | | U_i (V) | 1000 | 1000 | |
| Overvoltage category / pollution degree | | | III/3 | III/3 | |
| Terminal capacity | | mm ² | 1 x (25–185) 2 x (25–70) | 1 x (25–240) 2 x (25–240) | |
| Switching capacity | | | | | |
| Rated short-circuit making capacity | 240V AC | I_{cm} (kA) | 63 | 187 | |
| | 400/415V AC | I_{cm} (kA) | 53 | 105 | |
| Rated short-circuit breaking capacity | I_{cu} to IEC/EN 60947 test cycle O-t-CO | 240V AC | I_{cu} (kA) | 30 | |
| | | 400/415V AC | I_{cu} (kA) | 25 | |
| | I_{cs} to IEC/EN 60947 test cycle O-t-CO-t-CO | 240V AC | I_{cs} (kA) | 15 | 42.5 |
| | | 400/415V AC | I_{cs} (kA) | 12.5 | 25 |
| Utilisation category | | | A | A | |
| Rated making and breaking capacity | | | | | |
| Rated operational current AC-1 | 240V AC | I_e (A) | 250 | 630 | |
| | 400/415V AC | I_e (A) | 250 | 630 | |
| Lifespan, mechanical (of which max. 20% trip by shunt/undervoltage release) | | operations | 10000 | 7500 | |
| Maximum operating frequency | | S/h | 30 | 30 | |
| Lifespan, electrical AC-1 | 240V AC | operations | 5000 | 2500 | |
| | 400/415V AC | operations | 5000 | 2500 | |
| Current heat loss per pole at I_u | | W | 19 | 40 | |
| Overload releases | | | | | |
| Temperature compensation for PMC2 to IEC/EN 60947, VDE 0660, part 101. Residual error in range -25°C/+70°C (ref. temperature 40°C) | thermomagnetic | %/K | 0.3 | – | |
| | electronic | %/K | 0.3 | 0.3 | |
| Total opening delay on short-circuit | | ms | < 10 | < 10 | |

Technical Data

Switch Disconnectors – PSC

| | | PSC2-... | PSC3-... |
|---|--------------------|-----------------|------------------------------|
| Rated impulse withstand voltage | Main contacts | U_{imp} (V) | 8000 |
| | Auxiliary contacts | U_{imp} (V) | 6000 |
| Rated operational voltage | | U_e (VAC) | 525 |
| Overvoltage category / pollution degree | | | III/3 |
| Terminal capacity | | mm ² | 1 x (25–185) 2 x (25–70) |
| | | | 1 x (25–240) 2 x (25–240) |
| Switching capacity | | | |
| Rated short-circuit making capacity | | I_{cm} (kA) | 5.5 |
| Rated short-time withstand current | t = 0.3s | I_{cw} (kA) | 3.5 |
| | t = 1s | I_{cw} (kA) | 3.5 |
| Rated conditional short-circuit current with back-up fuse | | A gG/gL | 250 |
| | 240V AC | kA | 100 |
| | 400/415V AC | kA | 100 |
| Rated making and breaking capacity | | | |
| Rated operational current AC-22/23A | 240V AC | I_e (A) | 250 |
| | 400/415V AC | I_e (A) | 250 |
| Lifespan, mechanical | | operations | 10000 |
| Maximum operating frequency | | S/h | 30 |
| Lifespan, electrical AC-1 | 240V AC | operations | 5000 |
| | 400/415V AC | operations | 5000 |
| Current heat loss per pole at I_u | | W | 16 |
| | | | 40 |

Miniature Circuit Breaker – PLHT

| Electrical | |
|---|---|
| Design according to | EN 60947-2 |
| Current test marks as printed onto the device | |
| Rated voltage | |
| AC | 230/400V |
| DC | 60V (per pole) |
| Ultimate short circuit breaking capacity | according to IEC/EN 60947-2 |
| Characteristics B, C | $I_n = 20\text{--}63\text{A } 25\text{kA}$ |
| | $I_n = 80\text{--}100\text{A } 20\text{kA}$ |
| | $I_n = 125\text{A } 15\text{kA}$ |
| Characteristic D | $I_n = 63\text{A } 25\text{kA}$ |
| | $I_n = 80\text{A } 20\text{kA}$ |
| | $I_n = 100\text{A } 15\text{kA}$ |
| Characteristic | in accordance with characteristics B, C, D |
| Back-up fuse max. | 200 A gL |
| Rated insulation voltage | 440V |
| Peak withstand voltage U_{imp} | 4kV |
| Selectivity class | in accordance with class 3 |
| Endurance | ≥ 20,000 operating cycles |
| Mechanical | |
| Frame size | 45mm |
| Device height | 90mm |
| Device width | 27mm (1.5MU) per pole |
| Mounting | quick fastening with two lock-in positions on DIN rail EN 50022 |
| Degree of protection, built-in | IP40 |
| Upper and lower terminals | lift terminals |
| Terminal protection | finger and hand touch safe, BGV A3, ÖVE-EN 6 |
| Terminal capacity | 2.5–50 mm ² |

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