



**Q3 ENERGIE**  
GmbH & Co. KG



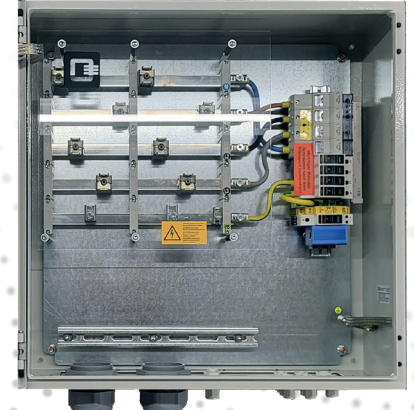
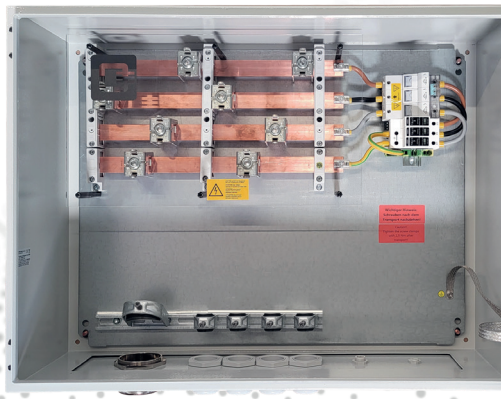
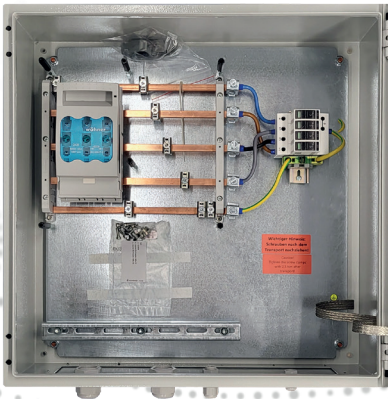
# AC Connection Box

## For TN-C, TN-S and TN-C-S Systems

Custom AC connection and protection technology for PV, battery storage and hybrid energy

### AC Connection Boxes Made to Measure | Configurations

- Rated currents from 160 A to 630 A
- Indoor or outdoor installation
- Type 1+2 or Type 2 surge protection
- Custom-built configurations
- TN-C, TN-S, TN-C-S
- NH fuse switch disconnectors or load break switches
- Optional metering and monitoring



*Note: The configurations shown in this brochure are standard examples.  
Q3 ENERGIE also manufactures customer-specific and project-specific solutions.*

**Q3. The Box Makers.**

# Q3 AC Connection Box | 160 A

## Modular AC Connection Box for PV Inverters

<b>Part Number</b>	Q3-AC-94197
<b>Version</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure or Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>System Types</b>	TN-C, TN-S and TN-C-S systems (others on request)
<b>Application</b>	For smaller commercial installations, battery storage systems and PV systems with a single inverter

### Technical Data

<b>Rated Current</b>	160 A
<b>Busbar System</b>	Up to 160 A, finger-safe (transparent protective cover), identification according to EN 60445
<b>Enclosure (Indoor)</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure
<b>Enclosure (Outdoor)</b>	Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>Enclosure Dimensions</b>	600 × 600 × 250 mm (up to 1 inverter; larger enclosure sizes available for up to 4 inverters)
<b>Cable Entries</b>	M cable glands as required (typ. M20–M75), including strain relief
<b>Documentation / CE</b>	Labelling according to DIN/EN 60445; documentation pocket and circuit diagram; CE marking
<b>Note</b>	Enclosure dimensions may vary depending on selected options (SPD, terminals, back-up fuses).

### Options

<b>Surge Protection</b>	Type 1+2+3 SPD, 3+1 configuration (TN-C-S), optional remote signalling contact; pre-wired fuse switch on terminals
<b>Back-up Fuse / Short-Circuit Protection</b>	Depending on the supply configuration; for high upstream fuse ratings, SPD back-up fuse according to the SPD datasheet.
<b>Load Break Switch / NH Fuse Switch Disconnecter</b>	NH00 fuse switch disconnecter with/without fuse links; NH00 gG 6–160 A
<b>PEN Test Disconnect Terminal</b>	Tool-operated PEN disconnect terminal with test facilities; PE upstream / N downstream of disconnect point
<b>Finger Protection</b>	Transparent finger-safe covers for busbars and terminals
<b>Cable Entry Kits</b>	Pre-assembled kits (e.g. B. M32/M40/M50) including locknuts and seals
<b>Accessories</b>	Terminal strips, equipotential bonding strap, marking kits, strain reliefs

### Standards & CE

EN 61439-1/-2 Low-voltage switchgear and controlgear assemblies	EN 62208 Empty enclosures for low-voltage switchgear assemblies
EN 60947-1/-3 Switchgear and controlgear (load break switches / fuse switch disconnectors)	EN 61643-11 Surge protective devices
EN 60445 Identification of equipment terminals and conductors	EN 60529 Degrees of protection (IP)
EU Directives: 2014/35/EU (LVD)   2014/30/EU (EMC)   2011/65/EU (RoHS)	

*The actual equipment configuration and applicable standards depend on the specific project execution.*

# Q3 AC Connection Box | 250 A

## Modular AC Connection Box for PV Inverters

<b>Part Number</b>	Q3-AC-47712
<b>Version</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure or Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>System Types</b>	TN-C, TN-S and TN-C-S systems (others on request)
<b>Application</b>	For medium-sized commercial installations and multiple inverter applications

### Technical Data

<b>Rated Current</b>	250 A
<b>Busbar System</b>	Up to 250 A, finger-safe (transparent protective cover), identification according to EN 60445
<b>Enclosure (Indoor)</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure
<b>Enclosure (Outdoor)</b>	Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>Enclosure Dimensions</b>	600 × 800 mm (depth project-specific, e.g. 250–300 mm)
<b>Cable Entries</b>	M cable glands as required (typ. M20–M75), including strain relief
<b>Documentation / CE</b>	Labelling according to DIN/EN 60445; documentation pocket and circuit diagram; CE marking
<b>Note</b>	For multiple inverter outputs or large cable glands, larger enclosures may be required

### Options

<b>Surge Protection</b>	Type 1+2+3 SPD, 3+1 configuration (TN-C-S), optional remote signalling contact; pre-wired fuse switch on terminals
<b>Back-up Fuse / Short-Circuit Protection</b>	Depending on the supply configuration; for high upstream fuse ratings, SPD back-up fuse according to the SPD datasheet.
<b>Load Break Switch / NH Fuse Switch Disconnecter</b>	NH1 fuse switch disconnecter with/without fuse links; NH1 gG 100–250 A
<b>PEN Test Disconnect Terminal</b>	Tool-operated PEN disconnect terminal with test facilities; PE upstream / N downstream of disconnect point
<b>Finger Protection</b>	Transparent finger-safe covers for busbars and terminals
<b>Cable Entry Kits</b>	Pre-assembled kits (e.g. B. M32/M40/M50) including locknuts and seals
<b>Accessories</b>	Terminal strips, equipotential bonding strap, marking kits, strain reliefs

### Standards & CE

EN 61439-1/-2 Low-voltage switchgear and controlgear assemblies	EN 62208 Empty enclosures for low-voltage switchgear assemblies
EN 60947-1/-3 Switchgear and controlgear (load break switches / fuse switch disconnectors)	EN 61643-11 Surge protective devices
EN 60445 Identification of equipment terminals and conductors	EN 60529 Degrees of protection (IP)

EU Directives: 2014/35/EU (LVD) | 2014/30/EU (EMC) | 2011/65/EU (RoHS)

*The actual equipment configuration and applicable standards depend on the specific project execution.*

# Q3 AC Connection Box | 400 A

## Modular AC Connection Box for PV Inverters

<b>Part Number</b>	Q3-AC-73909
<b>Version</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure or Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>System Types</b>	TN-C, TN-S and TN-C-S systems (others on request)
<b>Application</b>	For larger PV systems and battery storage projects

### Technical Data

<b>Rated Current</b>	400 A
<b>Busbar System</b>	Up to 400 A, finger-safe (transparent protective cover), identification according to EN 60445
<b>Enclosure (Indoor)</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure
<b>Enclosure (Outdoor)</b>	Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>Enclosure Dimensions</b>	800 × 800 mm (depth project-specific, e.g. 300–400 mm)
<b>Cable Entries</b>	M cable glands as required (typ. M20–M75), including strain relief
<b>Documentation / CE</b>	Labelling according to DIN/EN 60445; documentation pocket and circuit diagram; CE marking
<b>Note</b>	Depending on upstream fuse rating, switch-disconnector type and busbar dimensions

### Options

<b>Surge Protection</b>	Type 1+2+3 SPD, 3+1 configuration (TN-C-S), optional remote signalling contact; pre-wired fuse switch on terminals
<b>Back-up Fuse / Short-Circuit Protection</b>	Depending on the supply configuration; for high upstream fuse ratings, SPD back-up fuse according to the SPD datasheet.
<b>Load Break Switch / NH Fuse Switch Disconnecter</b>	NH2 fuse switch disconnecter with/without fuse links; NH2 gG 100–400 A
<b>PEN Test Disconnect Terminal</b>	Tool-operated PEN disconnect terminal with test facilities; PE upstream / N downstream of disconnect point
<b>Finger Protection</b>	Transparent finger-safe covers for busbars and terminals
<b>Cable Entry Kits</b>	Pre-assembled kits (e.g. B. M32/M40/M50) including locknuts and seals
<b>Accessories</b>	Terminal strips, equipotential bonding strap, marking kits, strain reliefs

### Standards & CE

EN 61439-1/-2 Low-voltage switchgear and controlgear assemblies	EN 62208 Empty enclosures for low-voltage switchgear assemblies
EN 60947-1/-3 Switchgear and controlgear (load break switches / fuse switch disconnectors)	EN 61643-11 Surge protective devices
EN 60445 Identification of equipment terminals and conductors	EN 60529 Degrees of protection (IP)
EU Directives: 2014/35/EU (LVD)   2014/30/EU (EMC)   2011/65/EU (RoHS)	

*The actual equipment configuration and applicable standards depend on the specific project execution.*

# Q3 AC Connection Box | 630 A

## Modular AC Connection Box for PV Inverters

<b>Part Number</b>	Q3-AC-21110
<b>Version</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure or Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>System Types</b>	TN-C, TN-S and TN-C-S systems (others on request)
<b>Application</b>	For industrial PV systems, transformer substations and grid connection points

Technical Data	
<b>Rated Current</b>	630 A
<b>Busbar System</b>	Up to 630 A, finger-safe (transparent protective cover), identification according to EN 60445
<b>Enclosure (Indoor)</b>	Indoor (G3) IP66 – powder-coated sheet steel enclosure
<b>Enclosure (Outdoor)</b>	Outdoor (G4) IP66 – galvanized sheet steel enclosure with UV-resistant coating
<b>Enclosure Dimensions</b>	1,000 × 800 mm (depth project-specific, e.g. 300–400 mm)
<b>Cable Entries</b>	M cable glands as required (typ. M20–M75), including strain relief
<b>Documentation / CE</b>	Labelling according to DIN/EN 60445; documentation pocket and circuit diagram; CE marking
<b>Note</b>	At 630 A, wider busbars and increased clearances are typically required; enclosure dimensions may vary depending on configuration

Options	
<b>Surge Protection</b>	Type 1+2+3 SPD, 3+1 configuration (TN-C-S), optional remote signalling contact; pre-wired fuse switch on terminals
<b>Back-up Fuse / Short-Circuit Protection</b>	Depending on the supply configuration; for high upstream fuse ratings, SPD back-up fuse according to the SPD datasheet.
<b>Load Break Switch / NH Fuse Switch Disconnecter</b>	NH3 fuse switch disconnecter with/without fuse links; NH3 gG 200–630 A
<b>PEN Test Disconnect Terminal</b>	Tool-operated PEN disconnect terminal with test facilities; PE upstream / N downstream of disconnect point
<b>Finger Protection</b>	Transparent finger-safe covers for busbars and terminals
<b>Cable Entry Kits</b>	Pre-assembled kits (e.g. B. M32/M40/M50) including locknuts and seals
<b>Accessories</b>	Terminal strips, equipotential bonding strap, marking kits, strain reliefs

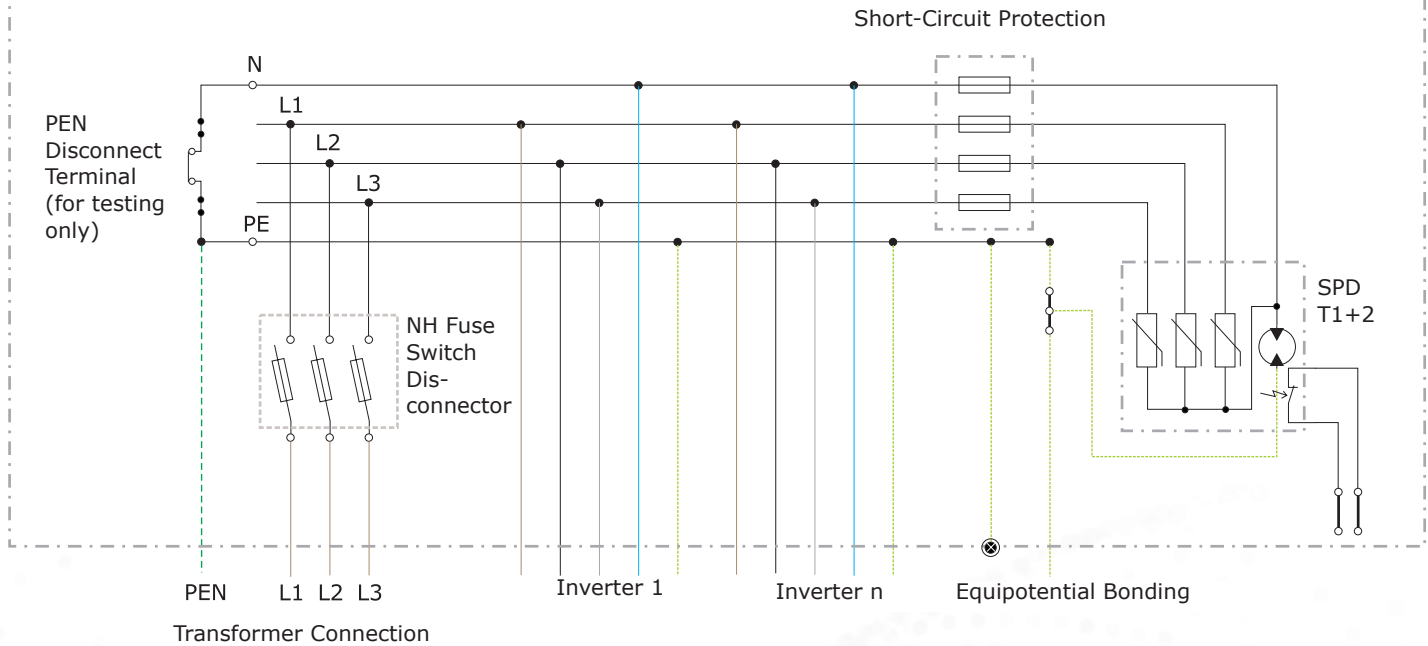
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EN 60947-1/-3 Switchgear and controlgear (load break switches / fuse switch disconnectors)	EN 61643-11 Surge protective devices
EN 60445 Identification of equipment terminals and conductors	EN 60529 Degrees of protection (IP)

EU Directives: 2014/35/EU (LVD) | 2014/30/EU (EMC) | 2011/65/EU (RoHS)

*The actual equipment configuration and applicable standards depend on the specific project execution.*

# Typical AC Connection Box Schematic

## Q3 AC-Box for TN-C, TN-S and TN-C-S systems



### Why Q3 AC Connection Boxes?

- Individually engineered
- Pre-assembled and ready for connection
- Integrated protection, isolation and surge protection concepts
- For PV, battery storage and hybrid energy systems
- Manufactured in Germany



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