

Main distribution board

quadro+, tried and tested.

Proven quality & rigidity.
Unique ease of mounting.

:hager

We're here to make your life easier

What are you looking for when you choose a distribution solution? Safety? Convenience and adaptability? Ease of mounting? At Hager, we believe all of these are essential requirements because they make your job simpler while ensuring the satisfaction of your customer. We've built our reputation on being a trusted, reliable partner. And we're here to help you at every stage of your project: from putting together a quote for mounting enclosures to optimising packaging and providing the right tools for assembly.



“I'm looking for high-quality products, on-time delivery, the right packaging and all the relevant information for assembly.”



Tried and trusted expertise



Factory production of enclosures.
Bleskastel, Germany.



As a family-owned company, we put a high value on relationships. Since our beginnings in Germany over 60 years ago, we've grown to become the trusted partner of customers in over 120 countries all over the world. How? By remaining true to our founding principles of respecting, understanding and supporting the people we do business with.

Today, our wide range of solutions covers electrical installations in residential and commercial buildings. We can help you with everything from energy distribution and cable management to wiring accessories and building automation.

22
production sites
worldwide

> 120
countries where
Hager solutions
are available

11 500
employees

3 000
active patents

6 %
of turnover
invested in
Research &
Development

30 000
training sessions
(face to face
& e-learning)

ISO 9001
certified sites

IEC 61439: your responsibilities

The IEC 61439 standard establishes the rules and regulations governing low-voltage switchgear and controlgear assemblies (known collectively as Assemblies). It was introduced in 2011 to make requirements and checks more rigorous and consistent.

In particular, the standard distinguishes between the responsibilities of the original manufacturer and those of the assembly manufacturer:

Original manufacturer	Assembly manufacturer (panel builder)
Designs the system	Manufactures the assembly according to the original manufacturer's rules
Issues system check principles to assembly manufacturer	Becomes the original manufacturer if any change is made to the original system
	Carries out routine tests of the final Assembly (tests, calculations, rules)



The different components of IEC 61439

IEC 61439-1
General rules

IEC 61439-2
Power switchgear and controlgear assemblies

IEC 61439-3
Distribution boards

IEC 61439-4
Assemblies for construction site

IEC 61439-5
Assemblies for public distribution networks

IEC 61439-6
Busbar trunking systems

IEC 61439-7
Particular applications (e.g. charging stations...)

As the Assembly manufacturer, you are responsible for the systematic verification of each assembly, based on 9 routine checks:

01

Degree of protection acquired through the covers

02

Clearance and creepage distances

03

Protection against electric shocks and integrity of protection circuits

04

Integration of incorporated components

05

Internal electric circuits and connections

06

Terminals for external conductors

07

Mechanical operation

08

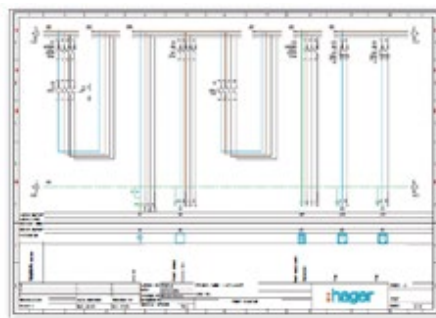
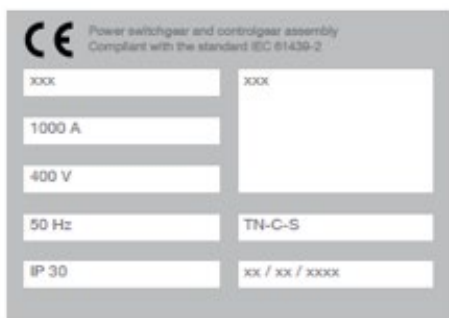
Electrical properties

09

Wiring, electrical operation and function of power-frequency withstand voltage

For each assembly, you must provide the following:

- Identification labels
- Handling, installation, operation and maintenance instructions
- List of individual checks
- Declaration of compliance



Find out more at africa.hager.com/standard-IEC61439

A complete range with proven versatility

When you partner with us, you can design and build your entire low-voltage electrical distribution system using the same supplier. That means you'll have a single point of contact for all your needs, making your life significantly simpler. You'll also reduce maintenance costs for your customer.

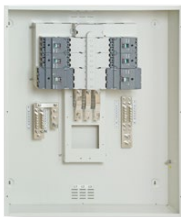


Main Distribution Board



quadro+

Sub-main Distributions Boards



invicta panel boards



quadro 4



quadro 5

Final Distribution Boards



invicta DR boards



invicta TPN boards

Consumer Units



invicta consumer units
with busbars



invicta consumer units
without busbars

quadro+: five key benefits of a fully-tested system

When you choose quadro+, you choose a low-voltage electrical distribution solution that has continually proven its worth.

01

Tested quality

Manufactured to exacting standards in our factories in Italy, quadro+ is fully design-verified to IEC standards EN-61439-1&2. This means it meets the highest international standards of security, performance and reliability.

02

Trusted rigidity

quadro+ enclosures are designed with an extremely rigid structure (IK10 and IP55) for extra durability and transportability.





03

Safe and convenient transportation

quadro+ cabinets are shipped flat-packed to save on transportation costs and make storage easier.

04

Unique ease of mounting

You need just 8 screws to mount a quadro+ enclosure, and all screws are pre-mounted. Which means you can do the job quickly, securely, and on your own.

05

Reliable support

Thanks to our hagercad software, planning and designing your system is intuitive, simple and fast. You'll also benefit from local technical support and from our comprehensive handbook to make mounting easier.

quadro+, the complete solution

At every phase of your project, we're there to make your life easier, offering the support and expertise you need to work better and faster.



Proven tools



Project management software: **hagercad**

More planning security, less time required and increased convenience – hagercad offers you this and much more. The design software makes the configuration of low-voltage switching systems three-dimensional – and therefore even more transparent and simpler:

- **Creates single or multi-line circuit diagrams automatically, based on the required devices**
- **Helps you with the cabinet calculation**
- **Meets the latest standards – such as EN 61439.**



To benefit from a free hagercad training session, please go to africa.hager.com/hagercad



Technical handbook

A single handbook containing all the information you need to set up and operate the system, including handling, installation, operating, and maintenance.



Find out more at africa.hager.com/technicalhandbook

Technical support



Training

Throughout the year, we provide training for our different solutions. If you'd like to sign up for a training session on quadro+, agardio solution or hagercad, please contact your closest Hager partner.



Find out more at hager.com/partners



Customer service: local support

Offering one single point of contact for all your needs, our network of partners will advise you on tailored solutions for your projects, support you with your low voltage distribution planning, and give you technical support upon request.

Fully-tested system up to 1600A

01

Main distribution board

Segregation form 2b
InA up to 1600A
IP 55
IK 10
Class 1

- Fully design-verified in line with IEC standards EN-61439 for performance and safety
- Enclosure structure designed for fast, easy mounting by one person
- Rigid and flat-packed for ease of transport
- Wide range of enclosure dimensions to fit any multi-residential or commercial project

02

Main Incomers and Protection Devices

H3 MCCB

Ratings: 16 to 1600A
Breaking capacity: 18 to 70kA

- Large choice of ratings and breaking capacities to match any project specifications
- Compliant with IEC 60947-2

HW ACB

Ratings: 630 – 5000A with 3 frames
Breaking capacity: 50 to 100kA

- Top performance operation
- Compliant with IEC 60947-2

03

Energy Monitoring Solution

More information, more efficiency, more building value: our **agardio solution** bundles all the benefits into one system.

- Continuous network analysis
- Analysis of harmonics for timely detection of network problems
- Prevention of plant downtimes
- On time illustration of energy efficiency class.





A European system design-verified to international standards



Our quadro enclosures are designed, manufactured and tested to the highest international standards. And they are available in a range of shapes and forms to fit any project.

Technical specifications to the highest standards

Rated voltage UN	400 V a.c.
Rated operational voltage Ue	400 V a.c.
Rated current IN	up to 1600 A
Rated peak withstand current Ipk	up to 105 kA
Rated short-time withstand current Icw	up to 50 kA
Rated frequency fn	50 Hz
Rated impulse withstand voltage Uimp	8 - 12 kV
Rated insulation voltage Ui	800 - 1000 V
Mechanical impact protection	IK10
Degree of protection	IP30 / IP55



“Thanks to its VDE accredited laboratory, Hager tests all its products to the highest standards. We can also customize project designs by drilling additional holes in the enclosure.”

Antonio Petris
Product Manager for Enclosures,
Hager Group Italy



Made in Europe
All quadro enclosures are manufactured
in our factories in Porcia, Italy.



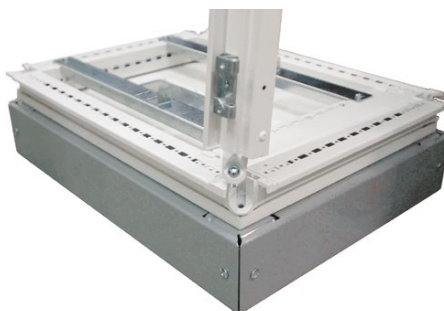
**Scan the code to find more
about the certifications
and test reports**

Easy to build. Fast to mount.

quadro+ has been developed with panel builders in mind. Thanks to its intuitive design, you'll find planning, building and mounting your distribution solution is faster, simpler and safer.



All frames, doors and plinths come pre-mounted.



No more lost screws!
All screws are pre-mounted.



Use just 1 screw per corner thanks to our patented die-cast joint.



Easy to transport thanks to its flat-pack format.

Looking for flexibility?

quadro+ features a modular design that comes in a wide range of dimensions. Choose from 2 heights (1900 or 2100mm), 3 depths (400, 600, 800mm) and 4 widths (450, 700, 900, 1000mm). It's an enclosure that will fit anywhere - which can prove essential for projects where space is limited.



Height (mm)	Depth (mm)		
	400	600	800
1900 or 2100 mm			

The 450 mm wide cell can be used to incorporate components for electrical distribution, busbars, or as a cable duct. This cabinet width enables 10 modular units to be fitted per row.



Height (mm)	Depth (mm)		
	400	600	800
1900 or 2100 mm			

700 or 900 mm wide cells can be used to incorporate components for electrical distribution. These cabinet widths enable 24 (700) and 36 (900) modular units to be fitted per row.



Height (mm)	Depth (mm)		
	400	600	800
1900 or 2100 mm			

900 or 1000 mm wide cells can be used to incorporate components for electrical distribution (width 700 mm) and busbars or for cable ducts of width 200 or 300 mm. This cabinet width enables 24 modular units to be fitted per row.

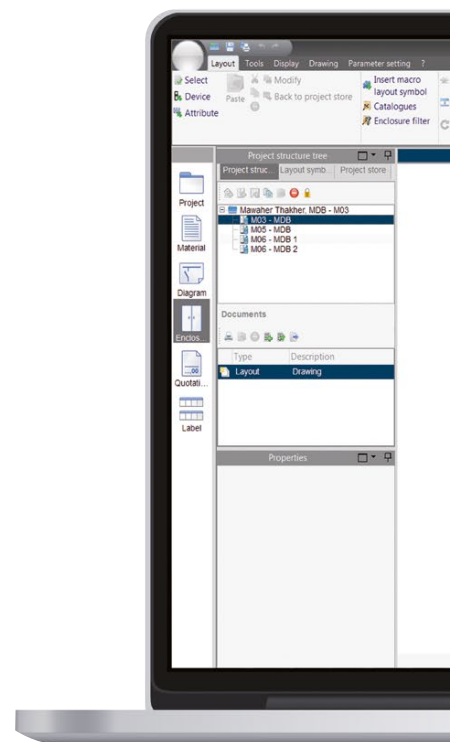
7 reasons to leave the hard work to hagercad

Preparing quotes for new projects is an essential part of your job and also one of the most time-consuming. Which is why we have designed hagercad, an effective planning and design software for low voltage electrical systems that makes your working day much easier.

hagercad helps you with the design of your low-voltage electrical installations and performs all the necessary calculations in line with IEC 60364 standards. Simply select the products and configurations you require and hagercad will generate board layouts, wiring diagrams and automatically create quotes complete with a bill of materials.



Find out more at
africa.hager.com/hagercad



01

Easily create and share your projects

Quickly access all your customer data, documents, product catalogues and notes. Importing, exporting and collaboration among project participants is also possible.

02

Quickly generate circuit diagrams

Single-line or multi-line wiring planning: tell hagercad your specific requirements and the software generates clean detail drawings.

03

Ensure greater accuracy

hagercad automatically proposes suitable cabinet types for all previously defined devices.

04

Take advantage of the automatic power loss and heat calculation feature

This feature is particularly useful when preparing power loss reports and technical descriptions.

05

Generate your terminal plan automatically

The terminal plan – including the terminal selection tool – makes your job much easier. Launch this module directly from the circuit diagram.

06

Enjoy the user-friendly function for creating device labels

Choose from different carriers and generate a range of simple-to-understand pictograms for existing and new cabinets.

07

Keep your project folder up to date with hagercad

At the click of a button, you can link all the relevant operating instructions and photos with your planning project.





Tested in the real world

Nelo is the world's leading manufacturer of top performance kayaks and canoes. With a network of 40 dealers, the company sells to over 100 countries. Its recently-built factory, home to 150 employees, was equipped with our energy distribution solutions.



To view the full project reference, go to africa.hager.com/nelo-portugal

Our offer included everything from the main switchboard quadro+ to small enclosures from the ranges Vector IP55 / IP65, FW and Orion+, all fully equipped with modular protection devices and domotics. The offer was completed with floor trunking systems and wiring accessories from the systo and cubuko ranges.

Did you know?

Since Athens 2004, Nelo has been the Official Provider in Canoe Sprint for the Olympic Games. Their boats have collected a total of 93 Olympic medals. During the last Olympic Games in Rio, they won 27 of the 36 available medals.

Place	Vila do Conde, Portugal
Construction Time	2 years
Open since	August 2017
Factory size	20000m ²
Electrical Engineering Consultancy	Sincrono
Panel Building	Quadrina
Electrical Installation	Undel



“The main reason hagercad stands out is because it lets you work on a 3D perspective. On large boards, this helps us to size the busbar and to position it on the board. We are able to have a better perception and eliminate certain errors which would otherwise only be detected in production.”

Mr Helder Carmelita,
Production Director of Quadrina

Tried and true support

Our network of partners is on hand whenever you need assistance. Their role is to understand your needs and provide the right support for all your projects. What's more, they offer training sessions on Hager products and solutions all through the year.



On-site training

We offer on-site training throughout the year.

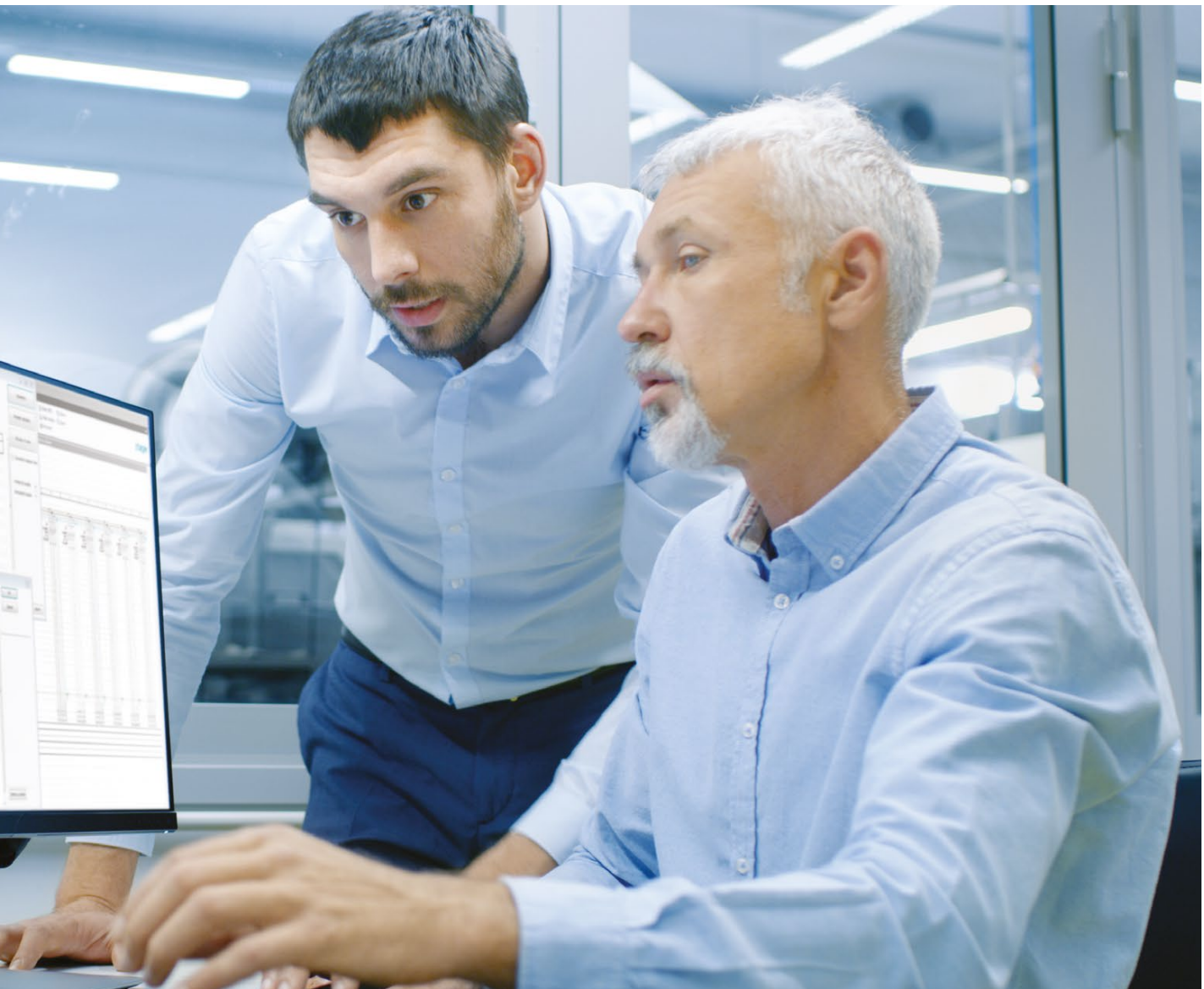


To get trained on our products and solutions, contact your partner at africa.hager.com/partners



**Interested in the
quadro+ solution?**

**Visit africa.hager.com/quadro
for full details.**





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