



SELECTED PRODUCTS **2024**

ABOUT

Chauvin Arnoux Energy

Chauvin Arnoux Energy, a company in the Chauvin Arnoux Group, is specialized in fixed equipment for measurement and supervision of electrical networks to meet the requirements of cutting-edge industries for intensive use in harsh environments.

Our key sectors



ELECTRICAL POWER GENERATION

Chauvin Arnoux Energy meets the specific needs of the nuclear sector by contributing expertise developed and acknowledged for more than thirty years.



ELECTRICAL POWER TRANSMISSION AND DISTRIBUTION

Chauvin Arnoux Energy proposes solutions for energy billing and network balancing for the players in the power transmission and distribution sectors.



RAILWAYS

A major partner of the rail market, Chauvin Arnoux Energy designs automation relays for the rolling stock and substations.



NAVAL

Chauvin Arnoux Energy develops tailored solutions for navigation and control in the context of naval applications.



A French brand with integrated production

Chauvin Arnoux Energy, a French company which is part of the Chauvin Arnoux Group, handles all the aspects of manufacturing for its products, from design through to final inspection of the equipment. Our experience, qualified teams guarantee the quality and reliability of the instruments supplied and their availability for several decades.

A long-term offering

Complete mastery of our industrial know-how in our factories in France and our ability to keep up with the changes in the markets (materials used in our instruments) enable us to guarantee constant quality and long-term availability for our products.

POWER MONITORS



For monitoring LV, MV and HV electrical networks

MEMO

- Easy-to-read, all-in-one screen
- Easy to set up and operate
- Managed inventory covering your main requirements

ENERIUM

- Accuracy suitable for the most critical MV/LV measurements
- The operating history and diagnostic tools to understand your electrical feeder
- Unique on the market, up to 8 totally-integrated inputs/outputs (on-off or analog)
- Qualimetry at the heart of a power monitor

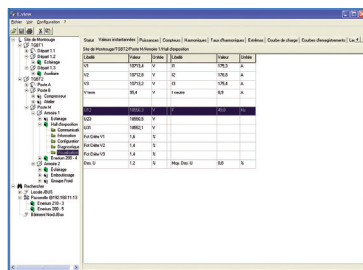
		MEMO	ENERIUM				
		Flush-mounting 96 x 96 mm			Flush-mounting 144 x 144 mm		
		Memo P200	Enerium 50	Enerium 150	Enerium 100	Enerium 200	Enerium 300
		ELECTRICAL ENERGY			MULTI-ENERGY		QUALIMETRY
Functional specifications	Accuracy class (as per IEC 61557-12)	0.5	0.5	0.5	0.5	0.5 or 0.2	0.2
	Version without display				Enerium 110	Enerium 210	Enerium 310
Recording functions	8 load curves						
	4 trend curves						
Alarms	Number of alarms		16	16	16	16	16
	Time/date-stamped events recorded		64	64	64	64	64
Power quality	THD / PF / Tan φ						
	Max. harmonic orders		25	50	25	50	50
	Qualimetry as per EN50160						
	Capture of V, U, I & In waveforms						16
Storage of the last 1,024 time/date-stamped events (dips, outages, overvoltages)							
Inputs / Outputs	Max. number of inputs / outputs	1	2	2	8	8	8
Inputs (option)	On-off (pulse or alarm mode)		0,1 or 2	0,1 or 2			
	Analog				0, 2, 4, 6 or 8	0, 2, 4, 6 or 8	0, 2, 4, 6 or 8
Outputs (option)	On-off (pulse or alarm mode)	1 (pulse)	0,1 or 2	0,1 or 2	0, 2, 4, 6 or 8	0, 2, 4, 6 or 8	0, 2, 4, 6 or 8
	Analog		0 or 2	0 or 2	0, 2 or 4	0, 2 or 4	0, 2 or 4
Graphics	Fresnel						
	Gauges						
	Harmonic-order histograms						
Communication interface	Optical USB		Front	Front	Front or rear	Front or rear	Front or rear
	Ethernet or RS485	RS485 only					
	Metrological LED						
Programming	Front panel						
	Software						

Mounting on DIN rail possible with mounting kit

		MEMO	ENERIUM				
		Flush-mounting 96 x 96 mm			Flush-mounting 144 x 144 mm		
		Memo P200	Enerium 50	Enerium 150	Enerium 100	Enerium 200	Enerium 300
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	Gauges						
	Harmonic-order histograms						
Communication interface	Optical USB		Front	Front	Front or rear	Front or rear	Front or rear
	Ethernet or RS485	RS485 only					
	Metrological LED						
Programming	Front panel						
	Software						

RELATED SOFTWARE

- **E.VIEW:** Configuration, diagnostic, installation and display software dedicated to the ENERIUM range of power monitors.



For your IEC 61850 networks, don't forget to use ENERIUM with the ELINK communication gateway:



- It modernizes the protocol of your measuring equipment without calling into question your choice of power monitors
- Up to 10 power monitors
- DNV.GL-certified





Tertiary



Industry

For simple metering functions

			MEMO MD32	MEMO MD65	MEMO TD80
			Single-phase		Three-phase
Strengths			1 module	2 modules	4 modules
Rating			32 A	65 A	80 A
Installation mounting			1 module	2 modules	4 modules
			direct	direct	direct
Energy metering & management			kWh	kWh total and partial	kWh total and partial
Output(s)			1	1	1
Accuracy class			IEC Class 1	IEC Class 1	IEC Class 1
To order			P01330740	P01330741	P01330745

MEMO MD32

- Direct connection up to 32 A
- Single-phase
- Class 1 as per IEC 62053-21



MEMO MD65

- Direct connection up to 65 A
- Single-phase
- Class 1 as per IEC 62053-21



MEMO TD80

- Direct connection up to 80 A
- Three-phase
- Class 1 as per IEC 62053-21



For advanced metering functions

ULYS MD45-M ULYS MD45-M MODBUS

- Direct connection up to 45 A
- Single-phase
- MID Class B
- Integrated RS485 Modbus communication (ULYS MD45-M Modbus model)



ULYS TDA80-M

- Direct connection up to 80 A
- Three-phase
- MID Class B



ULYS TD80-M

- Direct connection up to 80 A
- Three-phase
- MID Class B
- Integrated communication depending on model: Modbus, Ethernet



ULYS MD100-M ULYS MD100-M MODBUS

- Direct connection up to 100 A
- Single-phase
- MID Class B
- Integrated RS485 Modbus communication (ULYS MD100-M Modbus model)



ULYS TTA-M

- Connection on CT
- Three-phase
- IEC Class 1 / MID Class B



ULYS TT-M

- Connection on CT
- Three-phase
- MID Class B
- Integrated communication depending on model: Modbus, Ethernet



			ULYS MD45-M ULYS MD45-M Modbus	ULYS MD100-M ULYS MD100-M Modbus	ULYS TDA80-M	ULYS TTA-M	ULYS TD80-M	ULYS TT-M
			Single-phase		Three-phase			
Strengths			Multiple measurements Integration communication - MID version		Multiprotocol communication Multiple measurements - MID version		Multiprotocol communication Multiple measurements - MID version	
Rating			45 A	100 A	80 A	Sur TC 1 / 5 A	80 A	Sur TC 1 / 5 A
Installation			1 module	2 modules	4 modules			
			direct		direct	Sur TC	direct	Sur TC
Energy metering and management			kWh, kVAh		kWh, kVAh, kVAh total			
			kWh		kWh, kVAh, kVAh			
Multiple measurements			V, I, P, Q, F, FP		V, U, I, P, Q, F, FP, ΣP, ΣQ, ΣS			
Output(s) /Inputs			1	2	2	2	1	1
			Pulse output(s)		1	1	1 (sauf modèle Ethernet)	
			Tariff change input		1	1	1 (sauf modèle Ethernet)	
Accuracy class / MID certification			MID Class B		MID Class B		MID Class B	
To order			Without		Without		Without	
			RS485 Modbus		RS485 Modbus		RS485 Modbus	
			Ethernet		Ethernet		Ethernet	

* Depending on model

For electric vehicle metering functions

ULYS MD45-M EV

- Direct connection up to 45 A
- Single-phase
- MID Class B
- Integrated communication



ULYS TD100-M EV

- Direct connection up to 100 A
- Three-phase
- MID Class B
- Integrated communication



	ULYS MD45-M	ULYS TD100-M
Technical specifications	Single-phase grid	Three-phase grid
Maximum rated current (Imax)	45A	100A
Voltage input	230 VAC (-15/+10%)	
Communication	RS485 Modbus	
Accuracy class	MID (Class 1)	

ULYS MD45-M | ULYS TD100-M

Multi-measurement	
Active energy	Total, partial, import, export
Reactive energy	Total, import, export
Multi-measurement	P, Q, S, V, I, PF, F
Bidirectional	Yes
Environnement	
Operating temperature	-40°C to +70°C
Usage	Indoors
Ingress Protection	IP51

ULYS MCM MULTI-CHANNEL METER



Industry



Energy - Generation, Transmission & Distribution

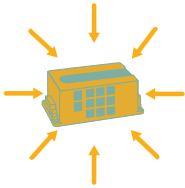
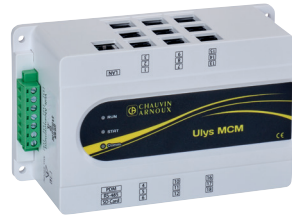


Energy efficiency

DESCRIPTION

Ulys MCM is the innovative solution for centralizing the measurement of multiple electrical feeders.

- Compact: 18 meters in one!
- Quick implementation
- Wide range of sensors for all types of conductors and current values
- Comprehensive measurement of all the electrical parameters
- Flexible communication



■ 18 meters in one



■ Compact size

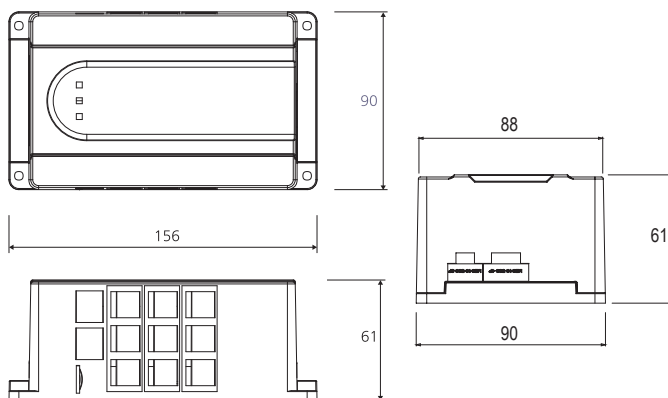


■ Compatible with a large number of sensors

TECHNICAL SPECIFICATIONS

Feature	Specification	
Electrical system	1P2F, 3P3F, 3P4F	
Nominal specifications of inputs	Voltage (Umin - Umax)	43-690 V~ between phases
	Voltage (Vmin - Vmax)	25-400 V~ between phases and neutral
	Measurement category	600 V Cat III
	Frequency	45-65 Hz
	Current	0-333 mV (max. 0.5 V p-p) Impedance : 20 kΩ
	On-off (DI)	1 point, 80-250 V~, external power supply
	Temperature CTN	25°C, 10 kΩ, (β(25/85)=3,970°K)
Auxiliary power supply	Voltage	100-240 V~
	Frequency	50-60 Hz
	Max. voltage (L-N)	Short term: 1,440 V~ - Long term: 490 V~
	Consumption	0.05-0.08 A
	Overvoltage category	300 V Cat II
Communication		Modbus RS485
		Modbus TCP
		RS232
On-off output contact (DO)	1 NO (normally open) SPST (single-pole single-throw)	

INSTALLATION CONDITIONS



TO ORDER

Model	Reference
ULYS-MCM9	P01 331 062
ULYS-MCM18	P01 331 064

The Ulys MCM is available in **9 or 18-channel** versions or three-phase measurement.

ACCESSORIES

Sensors



Model	Rogowski coil		Current transformer					
	Openable, flexible		Openable, rigid					
Type of sensor	Openable, flexible		Openable, rigid					
Models	MF300	MF3000	TCC V 105	TCC V 1050	TCC V 161	TCC V 242	TCC V 364	TCC V 366
Rated current	600 A	3,000 A	5 A	50 A	100 A	250 A	400 A	600 A
Clamping diameter	70 mm	200 mm	10 mm	10 mm	16 mm	24 mm	36 mm	36 mm
Weight of pack of 3	195 g	210 g	190 g	190 g	320 g	625 g	1,150 g	1,260 g
Dimensions of sensor alone (h x w x d)	130 x 80 x 12 mm	270 x 220 x 12 mm	41.4 x 24 x 26.5 mm	41.4 x 24 x 26.5 mm	51.7 x 30 x 31.5 mm	71 x 44 x 39.2 mm	84 x 5 x 41 mm	84 x 57 x 41 mm

Our sensors are delivered in packs of 3 directly connected to the connection adapter (P01379643)

WHAT SENSORS DO YOU WANT?

	Ratio	Diameter	
Rigid sensors			
PACK 3 TCC V 105	5A / 333mV	10mm	P01 379 616
PACK 3 TCC V 1050	50A / 333mV	10mm	P0 1379 626
PACK 3 TCC V 161	100A / 333mV	16mm	P01 379 618
PACK 3 TCC V 242	250A / 333mV	24mm	P01 379 620
PACK 3 TCC V 364	400A / 333mV	36mm	P01 379 622
PACK 3 TCC V 366	600A / 333mV	36mm	P01 379 624
Flexible sensors			
PACK 3 MF300	600A / (39,1µV/A)	70mm	P01 379 631
PACK 3 MF3000	3000A / (39,1µV/A)	200mm	P01 379 633

WHAT IS THE DISTANCE BETWEEN YOUR ULYS MCM AND YOUR SENSORS

RJ12M-RJ12M M	3 meters	P01 379 641
RJ12M-RJ12M L	9 meters	P01 379 642

Screen

The remote screen allows you to view the data measured by your Ulys MCM.



DO YOU WANT TO EQUIP YOUR ULYS MCM WITH A SCREEN?

Model		Reference
ULYS MCM D	Screen	P01 331 065
RJ45M-RJ45M M	Connection cable*	P01 379 640

*Cable essential for screen connection

MEASUREMENT TRANSDUCERS



Energy - Generation, Transmission & Distribution



Nuclear

A complete range covering all your measurement requirements

- Analog and digital
- Communication with all systems (4-20 mA, Modbus, IEC 61850)
- 40 years of experience
- Designed and manufactured in France



Analog transducers

T82N

For harsh environments



Digital transducers

TRIAD 2

For general applications

Measurements		T82N	TRIAD 2
Iac		■	■
Vac		■	■
Uac			■
P		■	■
Q		■	■
S			■
F		■	■
PF		■	■
CosΦ			■
TanΦ			■
φ			■
φ (U' - U'')			■
Options		T82N	TRIAD 2
Number of analog outputs		1	4
RS485			■
Ethernet			■
Relay output			■
Programmable			■
Plug-in version			
Self-powered		■ Depending on model	■ (1)

(1) By looping the input voltage

MEASUREMENT TRANSDUCERS



Energy - Generation, Transmission & Distribution Nuclear

For general applications



- For single-phase or balanced three-phase networks
- 1 analog output

- For all electrical networks
- 4 analog outputs



TRIAD 2

- Accuracy class 0.1 as per IEC 60688
- Reinforced range for IEC 61000-4-5 substations
- Compatible with IEC 61850 via ELINK (communication gateway) and digital output available as an option (Ethernet / RS485)
- Configured when ordering or configurable using the Triadjust 2 software



For your IEC 61850 networks, don't forget to use TRIAD 2 with the ELINK communication gateway

- Modernizes the protocol of your measuring equipment without calling into question your choice of a transducer
- Up to 20 transducers
- DNV.GL-certified



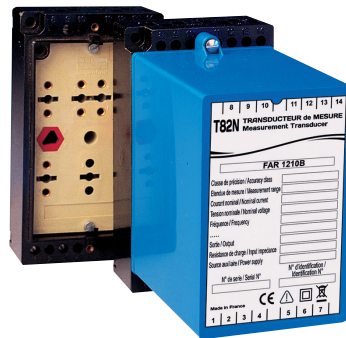
For harsh environments



IAR 1210B
RMS AC current



QAR 1232B
Reactive power



FAR 1210B
Frequency



JAR 1211B
Phase angle

UAR 1210B
RMS AC voltage

PAR 1232B
Active power

- Socket for plug-in unit



Model	Socket	
	Type	Reference
UAR 1210B	5	EMBB 4005
IAR 1210B	4	EMBB 4004
PAR 1232B	3	EMBB 4003
QAR 1232B	3	EMBB 4003
FAR 1210B	5	EMBB 4005
JAR 1211B	4	EMBB 4004

- Mounting on DIN rail for fixed or plug-in unit



Model	Reference
Mounting on symmetrical DIN rail	PDIN SYME
Mounting on asymmetrical DIN rail	PDIN ASYM

POWER QUALITY ANALYZERS



Industry



Energy - Generation, Transmission & Distribution



For 24/7 analysis of all the electrical characteristics of LV, MV and HV networks

MAP RANGE

- Compliant with the IEC 61000-4-30 Class A standard
- Data processing according to the EN 50160 standard
- Detection of the direction (upstream/downstream) of events
- Analysis of brief transients



Permanent analyzers



Non-intrusive analyzers

		MAP COMPACT	MAP 620	MAP 640	MAP 620-NI	MAP 607
Strengths		Predefined report as per the EN50160 standard. Compliance with the template calculated in the product. Immediate indication of compliance with the template by LED on front panel. Possibility of managing the whole MAP600 range with the same set of software.				Recovery of the measurements via USB 2.0 port. Plug & play system.
Installation	Network	Three-phase 400 V / 230 V	Three-phase 690 V / 400 V			Single-phase 230 V
	Number of voltage channels	3	3	3	3	1
	Number of current channels	3	4	4	4	
Sampling	Number of 0 - 20 mA inputs		4	4		
	Sampling frequency	12.8 kHz	12.8 kHz	12.8 kHz	12.8 kHz	12.8 kHz
Communication	Frequency for fast transients			2 MHz		
	Mini-USB					
	Built-in Ethernet port (Modbus TCP/IP available)	option	option	option	option	
	Port RS232					
Data storage	Capacity	64 MB	128 MB	128 MB	128 MB	64 MB
Power supply and connection	Internal operating reserve	1 s	10 s	10 s	10 s	1 s
	Power supply voltage	175 Vac to 255 Vac	85 - 264 Vac / 110 - 375 Vdc or 36 - 72 Vdc			230 Vac
	Voltage connections	screw-on	screw-on	screw-on	4 mm banana	Standardized connector
Calculated parameters	Current connections	screw-on	screw-on	screw-on	¼ turn	
	Voltage, frequency, unbalance, THD					
	Harmonics (up to 50th order)					
	Flicker pst (10 min), Plt (2 h) and Lft (inst.)					
	Remote control signals					
	Power harmonics					
Voltage events	P, Q and S power values					
	Power factors, tangents					
	Dips					
	Interruption / outage					
	Transients					
	Fast variations					
Capture and recording of events	Events log					
	HF transients					
	Signature					
Connection	Waveforms					
	Customizable qualimetry template					
Quick / non-intrusive connection						
Software	Qual SRT	Qual SRT				Qual SRTc
	E.Qual-Premium					
	E.Qual-Premium-Server					(import)



E.Qual-Premium Server is the single, user-friendly solution for managing a fleet of power quality analyzers comprising 10 to several hundred products.

- All the data retrievals are performed automatically by a high-performance remote data-retrieval engine
- A history since commissioning of the equipment fleet for benchmarking of all the power quality analyzers
- Tools for summarizing all the measurements and sharing the information concisely with decision-makers and operators.

MANAGEMENT AND ANALYSIS SOFTWARE



Analysis and report generation modules for network analyzers in the MAP range

E. QUAL-PREMIUM

E.Qual-Premium can be used to generate various views corresponding to the different parameters present in the measurement campaign recovered, including:

- views of the events
- views of the transients
- views of the trend curves
- views of the measurement campaign summaries
- reports generated directly in MS Word® format

The most extensive and critical electrical networks require special supervision of energy quality at the points of connection.

E.QUAL-PREMIUM SERVER

E.Qual-Premium Server is a unique, user-friendly solution for managing from ten to several hundred network analyzers.

E.Qual-Premium Server also includes E.Qual-Premium:

- graphical multi-equipment views
- multi-equipment event logs
- statistical views

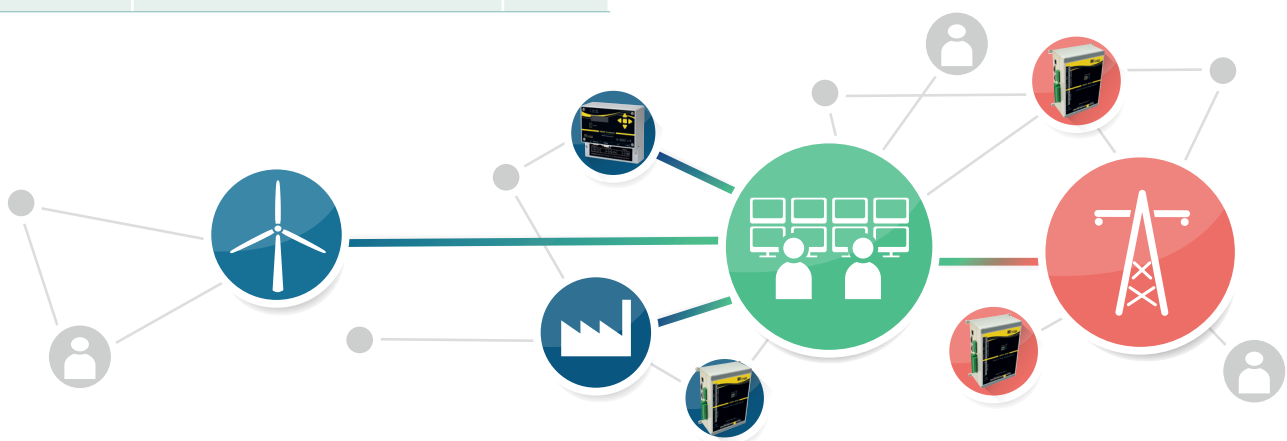
Peace of mind: all the data retrievals are performed automatically by a high-performance remote data-retrieval engine

Complete: a history from the moment the equipment fleet was commissioned, allowing benchmarking of all the analyzers

Analysis: special tools for summarizing the measurements on the fleet of analyzers and sharing the information in concise form with the decision-makers and operators

	E.Qual-Premium	E.Qual-Premium Server
Architecture		
Point to point	■	■
Multi-equipment by successive targeting	■	■
Management of measurements in database		■
Multi-site / multi-equipment		■
Client / server architecture		■
Data transfer		
Manual	■	■
Selective transfer	■	■
Automatic transfer		■
Communication log		■
Measurement display		
Real-time waveform and vectorial	■	■
Recorded curves	■	■
Curves with multi-equipment parameters		■
Global measurement campaign		■
Event display		
List of events	■	■
Waveform and fast RMS	■	■
Sorted views		■
Statistical views of events		■
Report generation		
Standard report covering one week	■	■
Report covering customizable period		■

Model	Description	Number of licenses
E.Qual-Premium	Configuration, display and analysis software	1
E.Qual-Premium Server	Configuration, remote data retrieval, display, administration and analysis software	5
E.Qual-Premium Server	Configuration, remote data retrieval, display, administration and analysis software	20



SURVEILLANCE RÉSEAUX BASSE TENSION



SOLUTION FOR SUPERVISION OF LV INSTALLATIONS

A tailored solution
based on integration of the
Ulys MCM multichannel meter



**ANTICIPATE
AGING OF THE
TRANSFORMER AND
INSTALLATIONS**

Optimized scheduling and reduced
maintenance costs



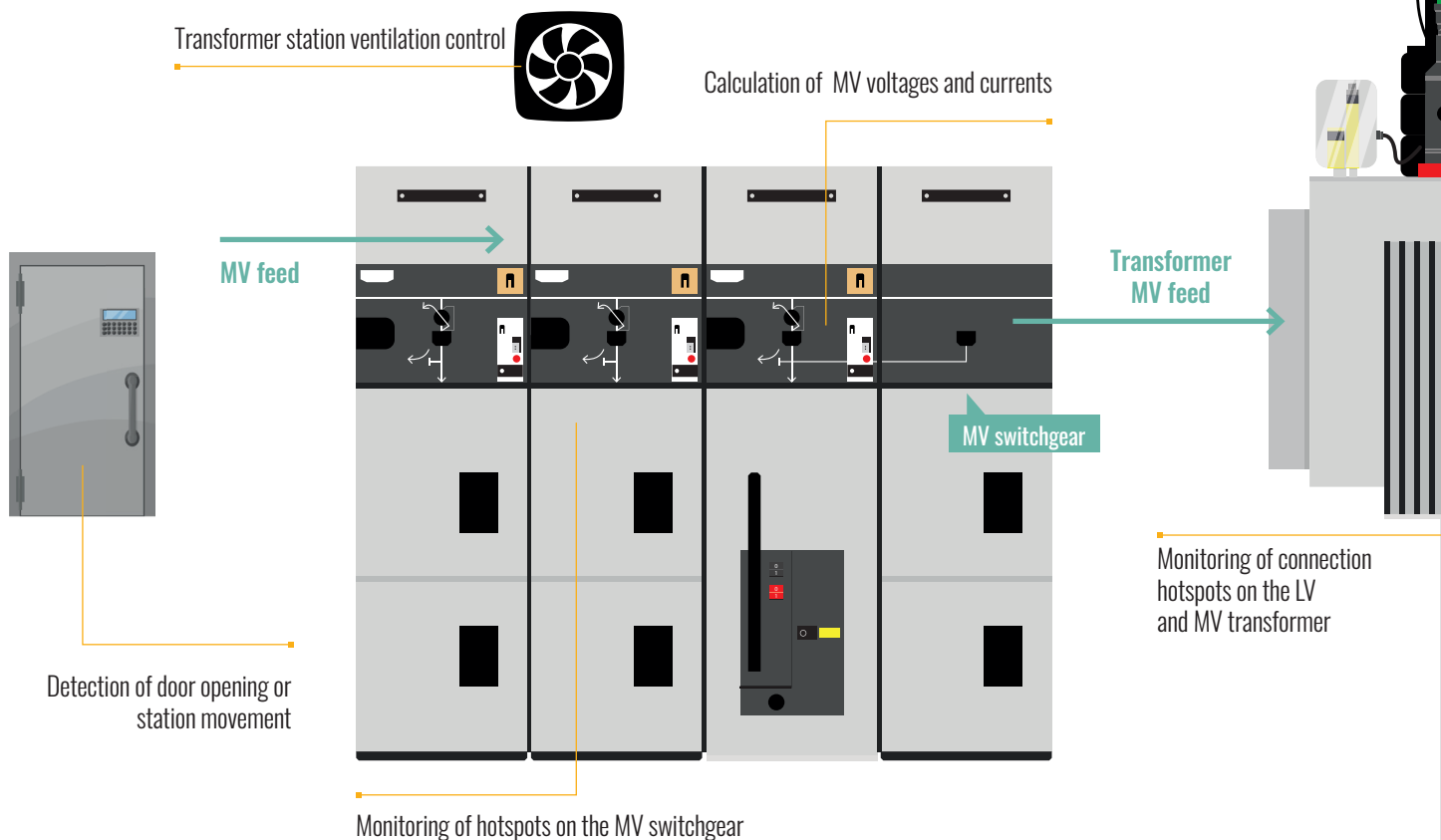
**TRACK AND
SECURE
THE ENERGY
FLOWS**

Reduced technical and
non-technical losses



**OPTIMIZE
THE INSTALLATIONS
AND NEW
CONNECTIONS**

Assessment of the available
reserve or the effective
overload on the feeders or
transformers





Industry

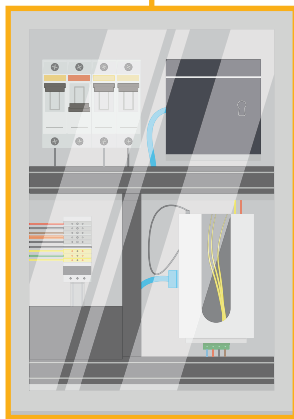


Energy - Generation, Transmission & Distribution

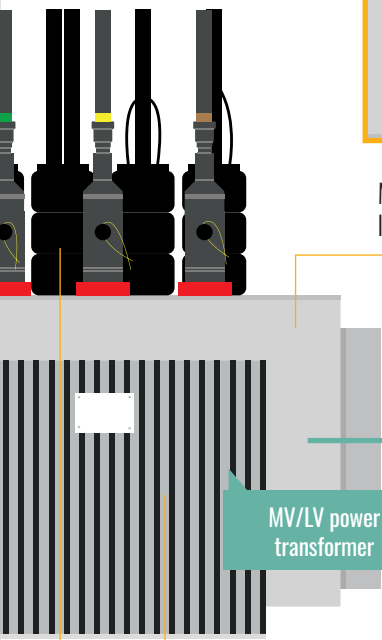


Nuclear

GridWatch measurement kit



Measurement of transformer load factor and unbalance

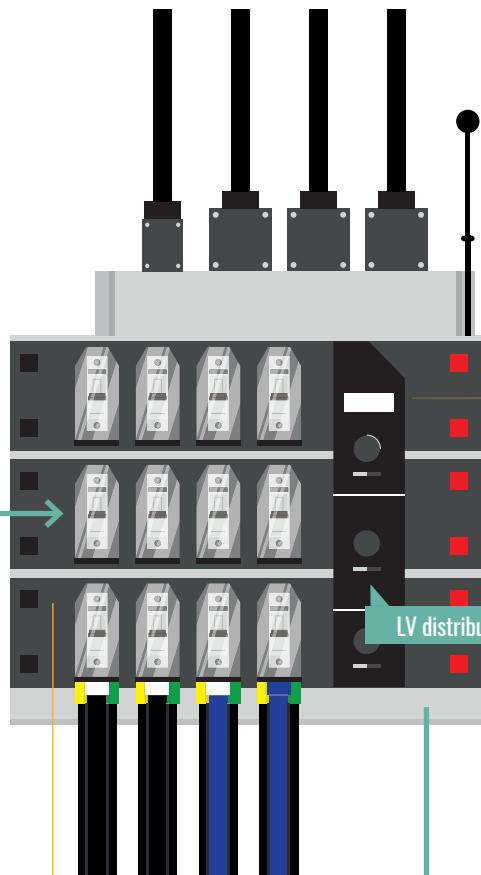


MV/LV power transformer

Monitoring of transformer surface temperature

Transformer station temperature and humidity measurement

LV transformer general feeder



Measurement of current and power values on each LV feeder

LV distribution switchboard

Detection of fuse blowout on LV feeder

Flood detection – transformer station water level

LV distribution

SURVEILLANCE RÉSEAUX BASSE TENSION

Strengths

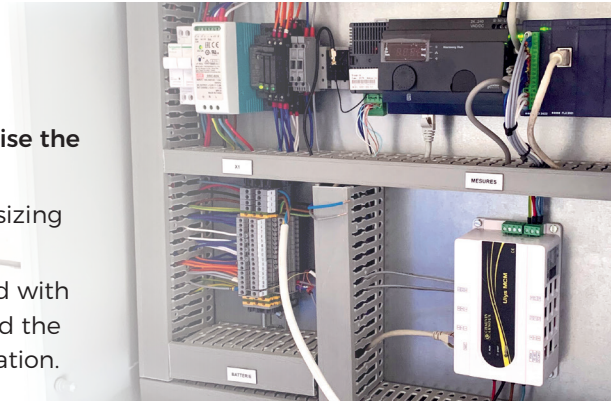


Complete and upgradable

GridWatch includes all the sensors needed to supervise the critical points in the MV/LV transformer station.

Available in various versions, it can be adapted to the sizing and the available budget for **optimum roll-out**.

Moving forward, GridWatch can be gradually equipped with sensors to instrument the transformer and then extend the analysis to the electrical feeders on the transformer station.



Quick roll-out

To reduce unavailability of the transformer station during commissioning of the system, **GridWatch has been designed for quick installation and roll-out**: split-core current sensors connected with a single click, prewired environmental measuring sensors, preconfigured wireless hotspot sensors, etc.

Interface our solution with your teams



Communication modes for everything from the demonstrator to high-volume roll-outs

SMS/Email alerts

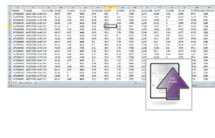
WEB pages

Recording and FTP Push of .csv data

MQTT alarms log

Real-time viewing

VPN service for remote access



M2Web API
HTTPS web services
OPC UA
Modbus TCP



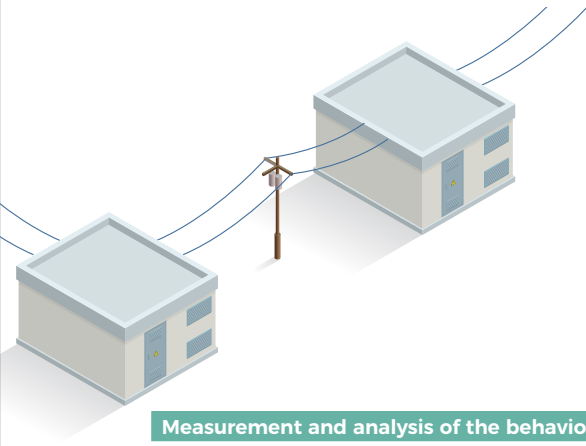
Industry



Energy - Generation, Transmission & Distribution



Nuclear



GridWatch C100



ANALYZE the load factor of the transformer and feeders to optimize the connection of new equipment

GridWatch C200



ANALYZE the load factor of the transformer and feeders to optimize the connection of new equipment

- + **ANTICIPATE** failures and aging on electrical installations
- + **STEER** maintenance of the transformer stations

Measurement and analysis of the behavior of cabin station equipment

Transformer monitoring: Electrical measurement and metering on the secondary of the general MV/LV transformer	<ul style="list-style-type: none"> • 3P+N voltage socket on feed terminal strip • Quick-install current socket for Rogowski sensor (diameter 200mm) <ul style="list-style-type: none"> • Quantities measured: V, U, I, F, P, Q, S, Phase, Ea, Eq, Es • MV quantities calculated: U, I
Monitoring of the low-voltage electrical feeders: Electrical measurement and metering	<ul style="list-style-type: none"> • Quick-install current socket for split-core CTs (up to 8 feeders) • Quantities measured: V, U, I, F, P, Q, S, Phase, Ea, Eq, Es
Measurement of neutral currents (general and low-voltage feeders)	- / Yes
Measurement of connection hotspot temperatures on the LV and MV transformer	- / Yes
Transformer surface temperature measurement	- / Yes
Measurement of the ambient temperature of the kit and the ambient temperature and humidity of the transformer station	- / Yes
Interfacing with the other elements in the transformer station	- / Analog inputs and on-off inputs/outputs available

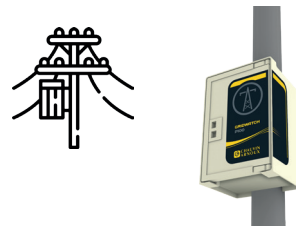
Communication and data management

Communication mode	3G/4G communication and associated remote antenna
Data viewing	Remote web pages
Management of alarms and recordings	<ul style="list-style-type: none"> • Overrun alarms and timeout with transmission of an SMS text or email, recording in alarms log • Recording of all the quantities and variables
Protocols used simultaneously	<ul style="list-style-type: none"> • Modbus TCP: access to all the electrical and physical quantities in real time (1s) <ul style="list-style-type: none"> • MQTT: Publisher mode on alarm / Subscriber mode • HTTP: Access to all the electrical and physical quantities in real time, as well as historized data <ul style="list-style-type: none"> • FTP Push: file sent to FTP server
Remote administration	Updating - Parameter Settings - Fleet management

General specifications

Local data viewing screen	- / Yes
Use	Indoor
Operating temperature	-10°C - +55°C
Installation	Wall mounting or mounting on stand
Standards	IEC 61439-1 / IEC 61439-5
Battery operation in the event of power outage	- / Yes

Tailored product: Contact Chauvin Arnoux Energy for details of the GridWatch P100 solution adapted for monitoring H61 pole-mounted electrical transformer stations!



Ask us for a quotation to equip your transformer station monitoring projects!

ANALOG PANEL METERS



Industry



Energy - Generation, Transmission & Distribution

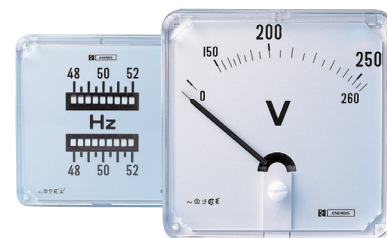


Nuclear

With round barrel for severe operating constraints

NORMEUROPE RANGE

- EDF-certified range, usable onboard sea-going vessels, ideal for power generators and distributors
- Large choice of functions, formats, measurement ratings and options



Front panel (round barrel) Format	48 x 48	72 x 72	96 x 96	COHO 48 x 48
Standard functions				
AC ammeter		90°	250°	
AC voltmeter		90°	250°	
Pointer dial frequency meter		90°	250°	
Vibrating reed frequency meter		1 to 9 reeds		
Wattmeter / varmeter				
Phasemeter		90°	250°	
DC ammeter		90°	250°	
DC voltmeter		90°	250°	
Hour meter				
Synchronization equipment				
Double vibrating reed frequency meter		2 x 9 reeds		
Differential voltmeter		90°	250°	
Advantages	NORMEUROPE, the industry reference for the generation, transmission and distribution of electrical energy for severe operating constraints.			

MECHANICAL PRESENTATION

Deflection	90°			250°		
Format	48 x 48	72 x 72	96 x 96	48 x 48	72 x 72	96 x 96
Fixation et étanchéité de façade hors standard (1)						
Standard Indicateur : IP 40 façade Boîtier : IP 20 Indicateurs 360° toujours 4 goujons	2 x M2.5 studs	2 x M4 studs	2 x M4 studs	2 x M2.5 studs	2 x M4 studs	2 x M4 studs
Option Ring fastening IP 40 front panel	drilling 48 mm	drilling 58 mm	drilling 88 mm	drilling 48 mm	drilling 58 mm	drilling 88 mm
Option Reinforced fastening + seal IP 52 front panel	4 x M2.5 studs	4 x M4 studs	4 x M4 studs	4 x M2.5 studs	4 x M4 studs	4 x M4 studs
Option Watertight (zero reset, front) + IP54 front panel seal		4 x M4 studs	4 x M4 studs	4 x M2.5 studs	4 x M4 studs	4 x M4 studs
Option Watertight (zero reset, front-rear) + IP55 product seal		4 x M4 studs	4 x M4 studs	4 x M2.5 studs	4 x M4 studs	4 x M4 studs
Production of non-standard dials (after feasibility approval)						
Dial markings on request	■	■	■	■	■	■
Color markings	■	■	■	■	■	■
Color areas	■	■	■	■	■	■
Black background with white markings	■	■	■	■	■	■
Double scale		■	■	■	■	■

(1) IPXY where X is the level of protection against penetration by solid bodies and Y is the level of protection against penetration by liquids.

A large number of references are available in our 2022 Catalog and on our website at https://catalog.chauvin-arnoux-energy.com/enerdis_en/produits/enerdis/panel-meters/indicateurs-analogiques

DIGITAL PANEL METERS



Industry



Energy - Generation, Transmission & Distribution



Nuclear

For the industrial sector

- Instant mounting without tools
- Quick, simple programming
- Compact design
- Digital processing of the data makes it possible to connect the panel meters to external measuring or supervision systems
- Totally programmable



	μDIGI1	μDIGI2	CA 2150	
	Economical programmable range for industrial use		Programmable range for universal use	
Front panel format (mm)	24 x 48	48 x 96	48 x 96	
Display range (in counts)	-1999/+9999	-1999/+9999	-19999/+19999	
Measurement functions	AC ammeter	μDIGI1 E	CA 2150-E	
	AC voltmeter	μDIGI1 E	CA 2150-E	
	DC ammeter	μDIGI1 E	CA 2150-E	
	DC voltmeter	μDIGI1 E	CA 2150-E	
	Process signals	μDIGI P/LP	μDIGI2 P	CA 2150-M
	Thermocouple thermometer		μDIGI2 P	CA 2150-M
	Pt 100 thermometer		μDIGI2 P	CA 2150-M
	Potentiometer		μDIGI2 P	CA 2150-M
	Load cell			CA 2150-M
	Frequency meter			CA 2150-D
	Tachometer			CA 2150-D
	Counter			CA 2150-D
Chronometer			CA 2150-D	
Special functions	MIN/MAX		CA 2150-E/D/M	
Output(s)	Analog output		Option	
	RS232 output		Option	
	RS485 output		Option	
	Threshold output(s)	Option	Option	
User-programmable				

TO ORDER ▼

μDIGI1

Model	Power supply	Reference
μDIGI1-LP	Self-powered (active loop)	P01 330 000
μDIGI1-P	85 - 265 Vac & 100 - 300 Vdc	P01 330 031
	22 - 53 Vac & 10,5 - 70 Vdc	P01 330 032
μDIGI1-E	85 - 265 Vac & 100 - 300 Vdc	P01 330 011
	22 - 53 Vac & 10,5 - 70 Vdc	P01 330 012

μDIGI2

Model	Power supply	Reference
μDIGI2-E	85 - 265 Vac & 11 - 265 Vdc	P01 330 081
μDIGI2-P	85 - 265 Vac & 11 - 265 Vdc	P01 330 080

CA 2150

Model	Power supply	Reference
CA 2150-E	85 - 265 Vac & 100 - 300 Vdc	P01 308 005
	22 - 53 Vac & 10,5 - 70 Vdc	P01 308 006
CA 2150-M	85 - 265 Vac & 100 - 300 Vdc	P01 308 001
	22 - 53 Vac & 10,5 - 70 Vdc	P01 308 002
CA 2150-D	85 - 265 Vac & 100 - 300 Vdc	P01 308 003
	22 - 53 Vac & 10,5 - 70 Vdc	P01 308 004

Option boards	μDIGI1	μDIGI2	CA 2150
2-relay alarm		P01 319 301	P01 319 301
4-relay alarm			P01 319 303
Com RS 485			P01 319 307
Com RS 232			P01 319 306
4-20 mA output			P01 319 311
0-10 Vdc output			P01 319 310

CURRENT TRANSFORMERS



Industry



Energy - Transmission & distribution

For tariff metering



JVR 86



JVO 40-100



JVO 40-100 S



J3R 80B



JVO 90-160 S

		Core - Single-phase				
Type of connection	Wound primary	Ø M8/M10 > 75 A				
	Cable primary (mm)		Ø 42	Ø 40	Ø 66	Ø 90
Accuracy	Accuracy class	0.5	0.5	0.2s	0.5	0.2s
	Accuracy power (VA)	20	7.5 (bi-rating) / 15	7.5	15 (5 for 300 A 10 for 400 A)	7.5
Rating	Single-rating					
	Bi-rating		200 - 500 A	200 - 500 A		
	Tri-rating					500 - 1,000 - 2,000 A
Primary	5 / 5 A	■				
	20 / 5 A	■				
	40 / 5 A	■				
	50 / 5 A					
	60 / 5 A	■				
	75 / 5 A					
	100 / 5 A	■				
	150 / 5 A					
	200 / 5 A					
	250 / 5 A					
	300 / 5 A				■	
	400 / 5 A				■	
	500 / 5 A				■	
	600 / 5 A				■	
	750 / 5 A				■	
	1,000 / 5 A				■	
1,200 / 5 A						
1,250 / 5 A						
1,500 / 5 A						
2,000 / 5 A						

■ Also available with 1A secondary. Please contact us.

Tailored version of the the JVR86, JR 80B, JVP 1025 and JVP 1045 can be supplied on request.



JVP 1025



JVP 1045



JVP 1045B



JVP 1145 S



TRI 500



TRI 700



TRI 700 S

		Core - Single-phase				Core - Three-phase		
Type of connection	Cable primary (mm)	100 x 20	100 x 40	100 x 40	100 x 12			
	Cable clamp (cross-section in mm ²)					50 to 240	50 to 240	50 to 240
Accuracy	Accuracy class	0.5	0.5	0.5	0.2s	0.5	0.5	0.2s
	Accuracy power (VA)	15 (30 for 1,250 A)	15 (30 for 1,000 A)	7.5 (bi-rating) / 15	7.5	15	3.75	7.5
Rating	Single-rating							
	Bi-rating			500 - 1,000 A 1,000 - 2,000 A				50 - 100 A 100 - 200 A 200 - 500 A
	Tri-rating				500-1,000-2,000 A		100 - 200 - 500 A	
Primary	50 / 5 A							
	75 / 5 A							
	100 / 5 A							
	150 / 5 A							
	200 / 5 A							
	300 / 5 A							
	400 / 5 A							
	500 / 5 A							
	600 / 5 A							
	1,000 / 5 A							
1,250 / 5 A								
2,000 / 5 A								

CURRENT TRANSFORMERS



- Primary from 5 to 5,000 A
- Large choice of feedthroughs: cable, busbar

TCR



TCR / JVS



		TCR 10	TCR 15	TCR 21	TCR 31	TCR 41 JVS 25B	TCR 51 JVS 26B	TCR 61 JVS 30B	TCR 71 JVS 38B	TCR 75 JVS 39B	TCR 80 JVS 40	TCR 90 JVS 50	TCR 100 JVS 60	
		Wound primary				Cable/busbar primary					Busbar primary			
Type of connection		0.5	0.5	0.5	0.5	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s	0.5 0.2s
Wound primary (connection)		Aperture 25 x 25	Wire 16 mm ²											
Cable primary (mm)				Ø 20	Ø 22	Ø 26	Ø 28	Ø 44	Ø 63					
Busbar primary (mm)				15 x 10 20 x 10 25 x 5	20 x 12 25 x 11 30 x 10	20 x 20 25 x 12 30 x 10	20 x 25 30 x 15 40 x 10	50 x 30 60 x 12	50 x 50 60 x 37 80 x 30	3 x 100 x 10	100 x 20	100 x 30	125 x 60	
Primary	Primary													
	5 A	□	□											
	10 A	□	□											
	15 A	□	□											
	20 A	□	□											
	25 A	□	□											
	30 A	□	□											
	40 A	□	□	□										
	50 A	□	□	□										
	60 A	□		□										
	75 A	□		□										
	100 A	■		□	□	□ / ○	□							
	125 A	■		□	□	□	□							
	150 A	■		□	□	□ / ○	□ / ○							
	200 A			□	□	□ / ○	□ / ○							
	250 A			□	□	□ / ○	□ / ○							
	300 A				□	□ / ○	□ / ○							
	400 A				□	□ / ○	□ / ○	□	□					
	500 A				□	□	□ / ○	□ / ○	□ / ○	□				
	600 A				□	□	□ / ○	□ / ○	□ / ○	□				
750 A						□ / ○	□ / ○	□ / ○	□	□				
800 A						□ / ○	□ / ○	□ / ○	□					
1,000 A							□ / ○	□ / ○	□ / ○	□ / ○		□ / ○		
1,200 A							□ / ○	□ / ○	□ / ○	□ / ○		□		
1,500 A							□ / ○	□ / ○	□ / ○	□ / ○	□ / ○	□ / ○		
2,000 A								□ / ○	□ / ○	□ / ○	□ / ○	□ / ○		
2,500 A								□ / ○	□ / ○	□ / ○	□ / ○	□ / ○		
3,000 A								□ / ○	□ / ○	□ / ○	□ / ○	□ / ○		
4,000 A									□ / ○	□ / ○	□ / ○	□ / ○		
5,000 A										□ / ○	□ / ○	■ / ○		

TCRO and TC CLIP ranges for insertion on electrical installations without opening the conductor

TCRO



TC CLIP



		TCRO 2030	TCRO 5080	TCRO 8080	TCRO 80120	TCRO 80160	TCC 176	TCC 241	TCC 242	TCC 3644	TCC 366	
		Split core					Split core					
Accuracy class		0.5-1-3	0.5-1-3	0.5-1-3	0.5-1-3	0.5-1-3	1	1	1	1	1	
Cable primary (mm)							Ø 17	Ø 24	Ø 24	Ø 36	Ø 36	
Busbar primary (mm)		20 x 30	50 x 80	80 x 80	80 x 120	80 x 160						
Primary	60 A						■					
	75 A							■				
	100 A	■							■			
	125 A											
	150 A	■										
	200 A	■										
	250 A	■	■	■	■				■			
	300 A	■	■	■	■							
	400 A	■	■	■	■						■	
	500 A		■	■	■	■						
	600 A		■	■	■	■					■	
	750 A											
	800 A		■	■	■	■						
	1,000 A		■	■	■	■	■					
	1,200 A					■						
	1,500 A					■	■					
2,000 A						■						
2,500 A						■						
3,000 A						■						
4,000 A						■						
5,000 A						■						

□ 5 A secondary as standard/ For 1 A, please contact us

■ 1 A secondary on request

■ 5 A secondary only

○ JVS 5 A secondary

■ 1 A secondary only

AUXILIARY RELAYS

DEPENDING ON PRODUCTS



Monostable



Monostable with forcibly guided contacts



Bistable



Fast monostable or bistable



Time delay

Model	Monostable instantaneous	Bistable (latching)	Forcibly guided contacts	Fast-acting(*)	Time delay	Contacts	In	Notes	Rolling stock equipment (***)	Nuclear
RCM	■					2 CO	10 A	Compact		
RDM	■					4 CO	10 A	Compact		
RGM	■					4 CO	12 A	High breaking capacity (**)		
RMMX	■					8 CO	10 A	Multi-contact, compact		
RMM	■					8-12-20 CO	12 A	High breaking capacity, multi-contact		
POK-POKS	■					2 CO	5-10 A	Compact	🚂	☢️
BIPOK-BIPOKS	■					4 CO	5-10 A	Compact	🚂	☢️
TRIPOK-TRIPOKS	■					6 CO	5-10 A	Compact	🚂	
QUADRIPOK	■					8 CO	10 A	Compact	🚂	
ESAPOK	■					12 CO	10 A	Compact		
OK	■					4-8-12 CO	10 A	High breaking capacity	🚂	
OKB184	■					4 CO	10 A	High breaking capacity, K3-qualified		☢️
RE3000	■					4 CO	10 A	K3-qualified		☢️
FOKB	■					4 CO NC-NO	13 A	High breaking capacity, NF F62-002	🚂	
RCG	■		■			2 CO	10 A	Forcibly guided contacts, type A, EN61810-3	🚂	
RDG	■		■			4 CO	10 A	Forcibly guided contacts, type A, EN61810-3	🚂	
RGG Previous name RGMZX	■		■			4 CO	10 A	High breaking capacity, forcibly guided contacts, type A, EN61810-3	🚂	
RMGX	■		■			8 CO	10 A	High breaking capacity, forcibly guided contacts, type A, EN61810-3	🚂	
RGB		■				3-4 CO	12 A	High breaking capacity		
RMBX		■				7-8 CO	10 A	Multi-contact	🚂	
RMB		■				7-11-19 CO	10 A	High breaking capacity, multi-contact, common negative		
OKBA		■				4-8 CO	10 A	High breaking capacity	🚂	
RGMVX	■			■		4 CO	10 A	Operating time < 8 ms		
RMMV/X	■			■		8-12 CO	10 A	Operating time < 8 ms for 8 CO < 10 ms for 12 CO		
RGR	■			■		2 CO	2 A	Operating time < 3 ms		

AUXILIARY RELAYS

DEPENDING ON PRODUCTS

 Power generation	 Nuclear	 Power transmission	 Rolling stock	 Fixed railway installations	 Shipbuilding	 Oil industry	 Heavy industry
	Depending on products		Depending on products				

Model	Monostable instantaneous	Bistable (latching)	Forcibly guided contacts	Fast-acting(*)	Time delay	Contacts	In	Notes	Rolling stock equipment (***)	Nuclear
RGMV	■			■		4 (CO or NC)	10 A	Operating time < 8 ms		
RMMV	■			■		8 (CO or NC)	10 A	Operating time < 6 ms		
RMMZ11/13	■			■		8 CO	10 A	Operating time < 13 ms		
RGBV		■		■		4 CO	10 A	Operating time < 10 ms		
RMBV		■		■		8-12 CO	10 A	Operating time < 10 ms		
RGBZ10/11		■		■		3-4 CO	12 A	Operating time < 12 ms		
RMBZ30		■		■		7 CO	10 A	Operating time < 18 ms		
RV LV16	■			■		6 (NO or NC)	5 A	Operating time < 6 ms		
RDT					■	4 CO	10 A	Time delay on pick-up or drop-out		
RDL - RGL					■	2 CO	10 A	Flasher		
RDTE15/16					■	4 CO	10 A	Delay on drop-out, adjustable duration, no Vaux		
RGTO					■	1 CO	5 A	Delay on drop-out, adjustable duration, no Vaux		
TMM					■	4 CO	10 A	Multifunction relay, 10 functions		
TM - TMS Previous names OK-TMF/S					■	4 CO	5-10 A	Time delay on pick-up or drop-out		
TOK					■	4 CO	10 A	High breaking capacity, time delay on pick-up or drop-out		
OKR					■	4 CO	5 A	Time delay on pick-up or drop-out		
OKT					■	4 CO	5 A	Time delay on pick-up or drop-out		
UTM					■	-	-	Static time delay unit		
TOK-L					■	4 CO	10 A	High breaking capacity, flasher relay		
TOK-FP					■	4 CO	10 A	High breaking capacity, flasher relay		
OKRE-L					■	4 CO	5 A	Flasher		
OKRE-FP					■	4 CO	5 A	Flasher		
CLE					■	4 CO	5 A	Flasher		
RGK			■		■	4 CO	12 A	Forcibly guided contacts, type A, EN61810-3		
MOK-V2	■					2 CO	3 A	Measuring relay, voltage		



Fast-acting monostable or bistable



Logic function



Time-delay with forcibly guided contacts



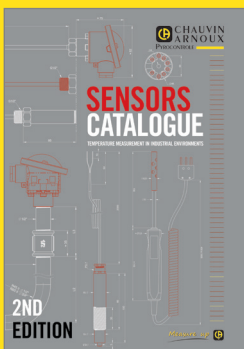
Measurement

Large choice of related sockets. Please contact us for any other information and to obtain our Catalog



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ONE CENTRALIZED CONTACT

FRANCE

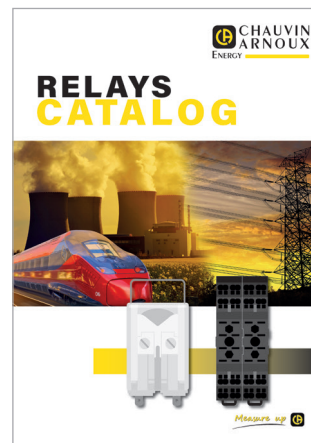
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INTERNATIONAL

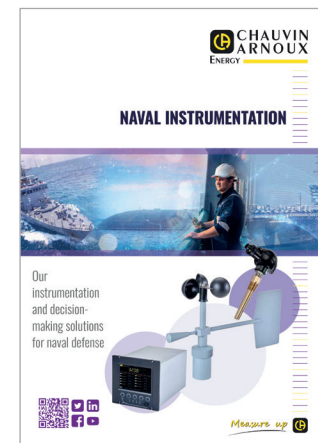
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The entire offering of fixed equipment for measurement, testing, metering and supervising networks and energy efficiency solutions.



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