

CMC 500

Ordering Information








CMC 500 Ordering information

Do you need a specific configuration or just want an overview of the available options our CMC 500 offers? This step-by-step ordering guide will provide you with all the information you need. From test set variants and hardware options to software packages and accessories, each step helps you build the configuration that exactly matches your needs. Simply follow the guide to determine your configuration's ordering number.




Step 1 – Test set variants:

Choose from different device variants.

	Description	Configuration
	CMC 500 USH The most versatile version for applications with high accuracy and amplitude requirements Currents: 7 × 30 A + 3 × 60 A Voltages: 7 × 300 V	USH
	CMC 500 UHH The most powerful version for applications with high output power and amplitude requirements Currents: 4 × 30 A + 6 × 60 A Voltages: 4 × 300 V	UHH
	CMC 500 USX The light, precise version for 1 A relay applications with high accuracy requirements Currents: 7 × 30 A Voltages: 7 × 300 V	USX
	CMC 500 UHX The light, powerful version for 5 A relay applications with higher amplitudes Currents: 4 × 30 A + 3 × 60 A Voltages: 4 × 300 V	UHX
	CMC 500 VHX The three-phase version for applications in the distribution grids Currents: 3 × 60 A + 1 × 30 A Voltages: 4 × 300 V	VHX

Step 2 – Hardware options:

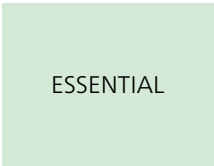



Choose between different hardware options, selecting either binary inputs only, or both binary/analog inputs, or add an optional DC measurement input. The NET-3 communication interface and standard precision are the default configuration.

	Description	Configuration
	NET-3 control interface (default configuration) Communication interface for PC, network and accessories	3
	Measurement option For binary (wet/dry) and analog signals for conventional relay testing, voltage and current measurements For binary signals (wet/dry) for conventional relay testing	A B
	DC measurement input For voltage and current measurements for transducer testing No DC measurement input	D X
	Precision Standard accuracy for analog outputs (default configuration)	S

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Step 3 – Software packages:







Choose one of four software packages based on your needs. This forms the basis for the software scope and can be extended in steps 4 and 5 at any time.

	Description	Item no.
 <p>ESSENTIAL</p>	<p>Essential Offers a good introduction with basic functions and modules; can serve as a base for custom compiled packages</p> <p>Included software modules: OMICRON Control Center, QuickCMC, State Sequencer, Harmonics, CB Configuration, Ramping, TransPlay, ADMO</p>	P0007946
 <p>STANDARD</p>	<p>Standard Contains all modules that are typically used for settings-based testing of protection devices</p> <p>Package savings: 5%</p> <p>Included software modules: All software modules from Essential + Advanced TransPlay, Pulse Ramping, Overcurrent, Distance, Advanced Distance, VI Starting, Autoreclosure, Differential, Annunciation Checker, Power, Advanced Power, CMC Swift</p>	P0008401
 <p>ENHANCED</p>	<p>Enhanced Like Standard, specifically extended by functions for system-based testing and transient simulation as well as free programming</p> <p>Package savings: 10%</p> <p>Included software modules: All software modules from Standard + Transient Ground Fault, Synchronizer, RelaySimTest, CMEngine</p>	P0008403
 <p>COMPLETE</p>	<p>Complete Covers all functions and software modules that are offered for controlling CMC test sets</p> <p>Package savings: 20%</p> <p>Included software modules: All software modules from Enhanced + Meter, Transducer, PQ Signal Generator, IEC 61850 Client/Server, GOOSE Configuration, Sampled Values Configuration, RelaySimTest Advanced Transformer Features, RelaySimTest Motor Features, EnerLyzer, TransView</p>	P0008404

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Step 4 – Software add-on packages:

Choose from a set of software add-on packages tailored to specific applications or use cases. This step is optional.

	Description	Item no.
	Renewables¹ Includes Pulse Ramping, Overcurrent, Power, and Advanced Power	P0006597
	Distribution¹ Includes Pulse Ramping, Overcurrent, Transient Ground Fault, Distance, Advanced Distance, VI Starting, Autoreclosure, and Differential	P0000369
	Measurement² Includes Meter, Transducer, PQ Signal Generator	P0000411
	IEC 61850 Package 1³ Includes GOOSE Configuration, IEC 61850 Client/Server and IEDScout for PC	P0006594
	IEC 61850 Package 2³ Includes GOOSE Configuration, Sampled Values Configuration and, IEC 61850 Client/Server	P0009745
	IEC 61850 Advanced³ Includes GOOSE Configuration, Sampled Values Configuration, IEC 61850 Client/Server, and IEDScout for PC	P0006595
	Distributed Testing Includes 2x RelaySimTest, 2x Transient Ground Fault, 2x CMGPS 588	P0006621

Example order number:

CMC 500 USH + Software package Standard + NET-3 Control Interface, Measurement Option (for binary and analog signals), No DC Measurement Input, Precision + IEC 61850 Package 2

CMC 500 UHH + Software package Complete + NET-3 Control Interface, Measurement Option (for binary signals), DC Measurement Input, Precision

Description	Item no.	(Configuration)
CMC 500 USH Standard package	P0008401	(USH -3AXS)
IEC 61850 Package 2	P0009745	

Order numbers: P0008401 (USH-3AXS), P0009745

Description	Item no.	(Configuration)
CMC 500 UHH Complete package	P0008404	(UHH -3BDS)
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Order number: P0008404 (UHH-3BDS)

¹ Selectable for Essential Software Package












² Requires DC measurement input option

³ Selectable for Essential, Standard, and Enhanced Software Package

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Step 5 – Software modules (page 1 of 2)

Choose individual software modules in addition to the software packages selected before.

Packages ¹	Description	Link	Item no.
	OMICRON Control Center Automation tool, document-oriented test plan, template and report form		
	QuickCMC Convenient manual testing in the Test Universe environment		
	State Sequencer Determining operating times and logical timing relations by state-based sequences		
	Harmonics Generation of signals with superimposed harmonics		
	CB Configuration Module for setting the CB simulation		
	Ramping Determining magnitude, phase, and frequency thresholds by ramping definitions		
	TransPlay Playback of Comtrade files, recording of binary input status		
	Advanced TransPlay² Playback and processing of COMTRADE, PL4, or CSV files		P0006829
	Pulse Ramping Determining magnitude, phase, and frequency thresholds by ramping definitions		P0006818
	Overcurrent (Includes license for Overcurrent Characteristics Grabber) Automatic testing of positive/negative/zero sequence overcurrent characteristics		P0006821
	Overcurrent Characteristics Grabber Helps to extract inverse-time overcurrent relay tripping characteristics		
	Distance Impedance element evaluations using single-shot definitions in the Z-plane		P0006816
	Advanced Distance² Impedance element evaluations using automatic testing modes		P0006591
	VI Starting Testing of the voltage dependent overcurrent starting function of distance relays		P0006820
	Autoreclosure Testing of the autoreclosure function with integral fault model		P0006819
	Differential Comprehensive three-phase differential relay testing (four modules)		P0000296
	Annunciation Checker Verification of the correct marshalling and wiring of protection devices		P0006830
	Power Testing with visualization and assessment in the P-Q plane (basic)		P0006835
	Advanced Power² Testing with visualization and assessment in the P-Q plane (enhanced)		P0006836

































¹ Contained in all packages: OCC Batch, AuxDC Configuration, ISIO Connect, Polarity Checker (for CPOL3), Pause Module, ExeCute, and TextView

² The Advanced modules include their basic counter parts (e.g. Advanced Power includes the Power Module)

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Step 5 – Software modules (page 2 of 2)

Choose individual software modules in addition to the software packages selected before.

Packages ¹	Description	Link	Item no.
	Transient Ground Fault² Simulation of ground-faults in isolated or compensated networks		P0006823
	Synchronizer Automatic testing of synchronizing devices and synchro-check relays		P0006822
	Meter Testing of single and multifunction energy meters		P0006841
	Transducer³ Testing of measurement transducers		P0006840
	PQ Signal Generator Simulation of power quality phenomena according to IEC 61000-4-30 and IEC 62586		P0006832
	IEC 61850 Client/Server Automatic SCADA testing in accordance with IEC 61850		P0006834
	GOOSE Configuration Testing with GOOSE according to IEC 61850		P0006831
	Sampled Values Configuration Testing with Sampled Values according to IEC 61850-9-2 ("9-2 LE") and IEC 61869-9		P0006833
	CMC CT-Check⁴ Simple and fast functional checks of current transformers		P0001376
	IEDScout Universal software tool for working with IEC 61850 IEDs		P0006493
	CMC Swift Easy and intuitive tool for simple protection and wiring checks		P0008292
	RelaySimTest² System-based protection testing by simulating realistic power system events		P0000367
	RelaySimTest Advanced Transformer Features Advanced transformer features for differential protection		P0006853
	RelaySimTest Motor Features Motor features for asynchronous motor simulation		P0008107
	CMEngine Programming interface for controlling CMC test sets with user specific software		P0006842
	EnerLyzer⁴ Analog measurements and transient recording with CMC test sets		P0000361
	TransView Transient signal analysis for COMTRADE files		P0006837
	ADMO light⁵ Asset and maintenance management for protection systems		

¹ Contained in all packages: OCC Batch, AuxDC Configuration, ISIO Connect, Polarity Checker (for CPOL3), Pause Module, ExeCute, and TextView

² RelaySimTest also includes the license for Transient Ground Fault

³ Requires hardware option "D" (DC measurement input)











⁴ Requires hardware option "A" (binary and analog inputs)

⁵ ADMO light is limited to 50 assets but can be upgraded to a full ADMO version at any time

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Step 6 – Accessories (page 1 of 5)















Choose from a wide range of accessories tailored to specific applications or use cases. This step is optional, but it's recommended to fully realize the potential of the solution.

	Description	Link	Item no.
Standard accessories	As part of the standard delivery, the following accessories are provided:		
	1×Country-specific power cord C13 connector, 2.5 m (8 ft)		P0000279 ¹
	1×Spare INTERLOCK key Spare INTERLOCK key in case one is lost or misplaced		P0008305
	1×Ethernet patch cable To connect CMC test sets with Ethernet connection to PC or network, 3 m (10 ft)		E1664400
	1×USB connection cable To connect CMC test sets with USB connection to a PC, 2 m (6.6 ft)		P0007555
	8×Test leads, red With 4 mm (0.16 in) safety plugs, 3 m (10 ft)		P0007815
	4×Test leads, black With 4 mm (0.16 in) safety plugs, 3 m (10 ft)		P0007816
	12×Flexible terminal adapters For screw-type terminals		E0439201
	8×Test lead jumpers For paralleling current triples up to 32 A and for shorting neutrals of binary inputs		E0439300
	1×Grounding cable With battery clamp and plug, 1 × 6 mm ² , 6 m (20 ft)		B1889700
	1×Accessory bag 300×100×210 mm (12×4×8 in) (W×H×D)		P0007627

¹ P0008582 for power cord with plug type B (NEMA 5-15P)

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Step 6 – Accessories (page 2 of 5)

	Description	Link	Item no.
	Included are various adapters for connecting test objects, as listed below:		P0010657
	12× Flexible test lead adapters for narrow terminals With 4 mm (0.16 in) safety plug for connections to narrow terminals		E2106200
	6× Flexible test lead adapters with retractable sleeve, red For connections to non-safety sockets		E0542801
	6× Flexible test lead adapters with retractable sleeve, black For connections to non-safety sockets		E0542901
	8× Test lead jumpers For paralleling current triples up to 32 A and for shorting neutrals of binary inputs		E0439300
	4× Crocodile clips, red For contacting pins or screw bolts		E0343100
	4× Crocodile clips, black For contacting pins or screw bolts		E0343600
	12× Flexible terminal adapters For screw-type terminals		E0439201
	12× Solid terminal adapters For screw-type terminals		E0202200
	20× Cable lug adapters For M4 (0.15 in) screws		E0542600
	10× Cable lug adapters For M5 (0.2 in) screws		E0542700
	1× Test lead, green-yellow To ground test objects, e.g. in a lab environment, 3 m (10 ft)		P0010292
	10× Cable ties (velcro fastener) Black, 150 mm (6 in)		E0544100
	1× Accessory bag 300×100×210 mm (12×4×8 in) (W×H×D)		P0007627

¹ Is not part of the standard delivery and must be ordered separately


















CMC 500 Ordering Information

Step 6 – Accessories (page 3 of 5)

	Description	Link	Item no.
	Three-phase generator cable Simplified three-phase connection between CMC test set and the test object Yellow, green, violet, blue 4 × 2.5 mm ² , 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs		P0008045 (YGVB)
	Red, yellow, blue, black 4 × 2.5 mm ² , 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs		P0008045 (RYBB)
	Safety test leads with fuse Offers additional protection when unintentionally short-circuiting the secondary wiring of an energized voltage transformer. 4 × red, 2 × black. 3 m (10 ft)		P0010656
	High-current injection accessories For paralleling the CMC 500 outputs to create a single-phase high-current output. Rated current: 450 A (2 s on / 10 s off) 3 × high current cable red, 3 × high current cable black. 16 mm ² , 6 m (20 ft) 1 × high-current screw clamp, red, 1 × high-current screw clamp, black		P0012958
	CMC CT-Check wiring accessories For connecting the CMC 500 to current transformers in combination with CMC CT-Check. Primary coaxial cables: 1 × 3 m (10 ft) and 1 × 10 m (33 ft) Secondary coaxial cables: 2 × 3 m (10 ft) 2 × Kelvin clamps, 4 × clamps 32 A, 4 × clamps 16 A, 12 × terminal adapters		P0008223
	Transport case Heavy-duty transport case with wheels and extendable handle		P0007932
	Soft bag Simple dust and surface protection		P0007626
	Mounting kit for 19-inch racks Allows the integration in 19-inch racks		P0010658
	Wireless USB adapter Essential for wireless control with CMC Swift		P0012739
Time synchronization			
	CMGPS 588 GPS controlled time synchronization unit		P0006433
	OTMC 100p PTP grandmaster clock		P0006508
	Ethernet cable reel 40 m (131 ft) cable extension for CMGPS 588 and OTMC 100p		P0009396
	EMCON 200 The PTP transparent Ethernet media converter requires an SFP transceiver module. The transceivers listed below must be ordered separately:		P0006504
	100BASE-FX SFP Transceiver Multi-mode, 1310 nm, with LC connector		E1311100
	1000BASE-SX SFP Transceiver Multi-mode, 850 nm, with LC connector		E0668700
	1000BASE-LX SFP Transceiver Single-mode, 1310 nm, with LC connector		E0668800

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Step 6 – Accessories (page 4 of 5)


















	Description	Link	Item no.
Testing traveling-wave-based relays and fault locators			
	TWX1¹ Testing traveling wave protection relays and fault locators		P0006385
Wiring and polarity checks			
	CPOL3 Handheld polarity and wiring checker		P0009398
Low level output signals			
	LLX1 Low level output accessory for testing devices with sensor inputs. The cable sets listed below must be ordered separately:		P0006381
	LAB1 cable set 4 x cables for ABB Relion 615, 620 (w. SIM0002), REX640 (w. SIM1901)		B1960000
	LAB2 cable set 4 x cables for ABB REF542plus		B1960100
	LAB3 cable set 4 x cables for ABB CSU-2		B2139500
	LSE1 cable set 4 x cables for Schneider Electric Sepam		B1960300
	LSE2 cable set 4 x cables for Schneider Electric Easergy, Schweitzer Engineering Laboratories SEL-7xx series		B1960500
	LSI1 cable set 4 x cables for Siemens Siprotec 4 Compact		B1960200
	LST1 cable set² 4 x cables for ABB Relion 615, 620 (w. SIM0005), REX640 (w. SIM1902), Siemens Siprotec 5 (7SY82 or w. IO241), Sprecher Automation SPRECON-EDIR		P0008935
	LLX2 Low level interface for external amplifiers		P0006382
	LLX3 Versatile low level outputs		P0006383

¹ Test set variant USX or USH recommended

² For devices according to IEC 61869-10/-11

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Step 6 – Accessories (page 5 of 5)

	Description	Link	Item no.
Binary in- and outputs			
	ISIO 200 Binary I/O terminal		P0006498
Amplifier & voltage transformer			
	CMS 356 6-phase current and 4-phase voltage amplifier Config LL1¹ With low-level connection cable to connect to a CMC test set Config LL2 With low-level connection cable with open ends to connect to a third-party signal source		P0001357 (LL1) P0001357 (LL2)
	VBO3 Three-phase voltage transformer for up to 600 V (L-N)		P0006276
Current measurements			
	C-Probe 2² Active AC and DC current clamp with voltage output		P0012683
	C-Shunt 1² 1 mΩ precision shunt for current measurements up to 32 A		B0620201
	C-Shunt 10² 10 mΩ precision shunt for current measurements up to 12.5 A		B0620301
Testing protection relays and energy meters			
	OSH 256R + ASH1 Optical scanning head for relay testing		P0009603
	OSH 256 + ASH1 Scanning head for meters with optical pulse LEDs		P0009600
	SH 2015 + ASH1 Scanning head for meters with magnetic attachment		P0009601
	TK 326 + ASH1 Scanning head for electromechanical meters with rotor marks		P0009602









¹ Requires LLX2 low level interface

² Requires hardware option "A" (binary and analog inputs)

CMC 500 Ordering Information

Step 7 – Calibration, warranty, OMICRON Care and technical support

In this final step, you can choose from the additional service options we offer, to have you fully covered.

	Description	Link	Item no.
Calibration			
			
	Standard factory calibration, inspection and adjustment		included
	IEC 17025 accredited calibration		P0011739
Warranty			
	2 years of warranty		included
	3 years of warranty		P0006247
	4 years of warranty		P0006246
	5 years of warranty		P0001050
Technical support			
	24/7 Professional technical support This service includes 24/7 technical support from OMICRON, so customers can rely on expert assistance at any time, day or night.		included

CMC 500 After-Purchase options and services

Hardware upgrades

If your testing needs change, our CMC 500 changes with you. To switch from one variant to another or add further hardware options, simply select one of the options below.

Test set variants



VHX



UHX



USX



UHH



USH

	Description	Item no.
Upgrade test set variant		
VHX to UHX	Upgrade to 4 × 300 V/30 A + 3 × 60 A	On request
VHX to USX	Upgrade to 7 × 300 V/30 A	On request
VHX to UHH	Upgrade to 4 × 300 V/30 A + 6 × 60 A	On request
VHX to USH	Upgrade to 7 × 300 V/30 A + 3 × 60 A	On request
UHX to UHH	Upgrade to 4 × 300 V/30 A + 6 × 60 A	On request
UHX to USH	Upgrade to 7 × 300 V/30 A + 3 × 60 A	On request
USX to USH	Upgrade to 7 × 300 V/30 A + 3 × 60 A	On request
Upgrade inputs		
DC in	Upgrade with DC measuring input (± 10 V/ ± 10 mA)	On request
Analog in	Upgrade to 10x multifunctional analog AC and DC measuring inputs	On request
Calibration and repair		
Calibration	Standard factory calibration, inspection and adjustment	P0010475
	IEC 17025 accredited calibration (pure service) ¹	P0011740
	IEC 17025 accredited calibration (full service) ²	P0011738
Repair	Repair and inspection	On request




¹ Includes IEC 17025 Found calibration

² Includes IEC 17025 AsFound calibration, hardware and software updates, adjustment, factory calibration, and IEC 17025 AsLeft calibration

CMC 500 After-Purchase options and services









Software upgrade packages

If your testing needs change, our software changes with you. To switch from one software package to another, simply select one of the options below.





	Description	Item no.
	Essential > Standard Adds modules: Advanced TransPlay, Pulse Ramping, Overcurrent, Distance, Advanced Distance, VI Starting, Autoreclosure, Differential, Annunciation Checker, Power, Advanced Power, CMC Swift	P0010796
	Standard > Enhanced Adds modules: Transient Ground Fault, Synchronizer, RelaySimTest, CMEngine	P0006613
	Enhanced > Complete Adds modules: Meter, Transducer, PQ Signal Generator, IEC 61850 Client/Server, GOOSE Configuration, Sampled Values Configuration, RelaySimTest Advanced Transformer Features, RelaySimTest Motor Features, EnerLyzer, TransView	P0010797

Training and individual support

If you're new to our products or a specific application, or simply need expert support, select one of our training offers or send us a request for individual support – we are here to empower you.

	Description	Link	Item no.
OMICRON Academy			
	Classroom and online trainings Regular interactive classroom and online training courses with hands-on practice using actual electrical equipment		Book online
	Customized trainings Customized training courses tailored to your exact requirements, planned specifically for you at your preferred location		P0006155
	Webinars Regular interactive webinars by expert trainers, plus free recorded sessions available anytime		Book online
	OMICRON eCademy Digital learning platform from OMICRON		Included

Individual support

	Creation of PTL templates Support for creating new templates for relays not covered in the Protection Testing Library (PTL) and for adapting existing ones to exactly match your needs		On request
	OMICRON Engineering services Expert support for analyzing, testing, and maintaining your protection systems to ensure a stable and reliable operation		On request

OMICRON is an international company that works passionately on ideas for making electric power systems safe, secure, and reliable. Our pioneering solutions are designed to meet our industry's current and future challenges. We always go the extra mile to empower our customers: we react to their needs, provide extraordinary local support, and share our expertise.

Within the OMICRON group, we research and develop innovative technologies for all fields in electric power systems. Customers worldwide rely on the accuracy, speed, and quality of our reliable, user-friendly solutions for electrical testing of medium- and high-voltage equipment, protection systems, digital substations, and cybersecurity.

Founded in 1984, OMICRON draws on their decades of profound expertise in the field of electric power engineering. A dedicated team of more than 1,300 employees provides solutions with 24/7 support at 23 locations worldwide and serves customers in more than 170 countries.

The following publications provide further information on the solutions described in this brochure:



CMC 500



Emotions are energy. Our energy moves.

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