

# 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
	<b>CMC 500 USH</b> The most versatile version for applications with high accuracy and amplitude requirements Currents: 7 × 30 A + 3 × 60 A Voltages: 7 × 300 V	USH
	<b>CMC 500 UHH</b> 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
	<b>CMC 500 USX</b> The light, precise version for 1 A relay applications with high accuracy requirements Currents: 7 × 30 A Voltages: 7 × 300 V	USX
	<b>CMC 500 UHX</b> The light, powerful version for 5 A relay applications with higher amplitudes Currents: 4 × 30 A + 3 × 60 A Voltages: 4 × 300 V	UHX
	<b>CMC 500 VHX</b> 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
	<b>NET-3 control interface (default configuration)</b> Communication interface for PC, network and accessories	3
	<b>Measurement option</b> 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
	<b>DC measurement input</b> For voltage and current measurements for transducer testing No DC measurement input	D X
	<b>Precision (default configuration)</b> Standard accuracy for analog outputs	S

# CMC 500 Ordering information

## 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.
ESSENTIAL	<p><b>Essential</b> Offers a good introduction with basic functions and modules; can serve as a base for custom compiled packages</p> <p><b>Included software modules:</b> OMICRON Control Center, QuickCMC, State Sequencer, Harmonics, CB Configuration, Ramping, TransPlay, ADMO</p>	P0007946
STANDARD	<p><b>Standard</b> Contains all modules that are typically used for settings-based testing of protection devices</p> <p><b>Package savings: 5%</b></p> <p><b>Included software modules:</b> 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
ENHANCED	<p><b>Enhanced</b> Like Standard, specifically extended by functions for system-based testing and transient simulation as well as free programming</p> <p><b>Package savings: 10%</b></p> <p><b>Included software modules:</b> All software modules from Standard + Transient Ground Fault, Synchronizer, RelaySimTest, CMEngine</p>	P0008403
COMPLETE	<p><b>Complete</b> Covers all functions and software modules that are offered for controlling CMC test sets</p> <p><b>Package savings: 20%</b></p> <p><b>Included software modules:</b> 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

# CMC 500 Ordering Information

## 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.
	<b>Renewables<sup>1</sup></b> Includes Pulse Ramping, Overcurrent, Power, and Advanced Power	P0006597
	<b>Distribution<sup>1</sup></b> Includes Pulse Ramping, Overcurrent, Transient Ground Fault, Distance, Advanced Distance, VI Starting, Autoreclosure, and Differential	P0000369
	<b>Measurement<sup>2</sup></b> Includes Meter, Transducer, PQ Signal Generator	P0000411
	<b>IEC 61850 Package 1<sup>3</sup></b> Includes GOOSE Configuration, IEC 61850 Client/Server and IEDScout for PC	P0006594
	<b>IEC 61850 Package 2<sup>3</sup></b> Includes GOOSE Configuration, Sampled Values Configuration and, IEC 61850 Client/Server	P0009745
	<b>IEC 61850 Advanced<sup>3</sup></b> Includes GOOSE Configuration, Sampled Values Configuration, IEC 61850 Client/Server, and IEDScout for PC	P0006595
	<b>Distributed Testing</b> 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	
<b>Order numbers:</b> P0008401 (USH-3AXS), P0009745		

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

<sup>1</sup> Selectable for Essential Software Package







































<sup>2</sup> Requires DC measurement input option

<sup>3</sup> Selectable for Essential, Standard, and Enhanced Software Package

# CMC 500 Ordering Information

## Step 5 – Software modules (page 1 of 2)

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

Packages <sup>1</sup>	Description	Link	Item no.
	<b>OMICRON Control Center</b> Automation tool, document-oriented test plan, template and report form		
	<b>QuickCMC</b> Convenient manual testing in the Test Universe environment		
	<b>State Sequencer</b> Determining operating times and logical timing relations by state-based sequences		
	<b>Harmonics</b> Generation of signals with superimposed harmonics		
	<b>CB Configuration</b> Module for setting the CB simulation		
	<b>Ramping</b> Determining magnitude, phase, and frequency thresholds by ramping definitions		
	<b>TransPlay</b> Playback of Comtrade files, recording of binary input status		
	<b>Advanced TransPlay<sup>2</sup></b> Playback and processing of COMTRADE, PL4, or CSV files		P0006829
	<b>Pulse Ramping</b> Determining magnitude, phase, and frequency thresholds by ramping definitions		P0006818
	<b>Overcurrent (Includes license for Overcurrent Characteristics Grabber)</b> Automatic testing of positive/negative/zero sequence overcurrent characteristics		P0006821
	<b>Overcurrent Characteristics Grabber</b> Helps to extract inverse-time overcurrent relay tripping characteristics		
	<b>Distance</b> Impedance element evaluations using single-shot definitions in the Z-plane		P0006816
	<b>Advanced Distance<sup>2</sup></b> Impedance element evaluations using automatic testing modes		P0006591
	<b>VI Starting</b> Testing of the voltage dependent overcurrent starting function of distance relays		P0006820
	<b>Autoreclosure</b> Testing of the autoreclosure function with integral fault model		P0006819
	<b>Differential</b> Comprehensive three-phase differential relay testing (four modules)		P0000296
	<b>Annunciation Checker</b> Verification of the correct marshalling and wiring of protection devices		P0006830
	<b>Power</b> Testing with visualization and assessment in the P-Q plane (basic)		P0006835
	<b>Advanced Power<sup>2</sup></b> Testing with visualization and assessment in the P-Q plane (enhanced)		P0006836



































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

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

# CMC 500 Ordering Information

## Step 5 – Software modules (page 2 of 2)

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

Packages <sup>1</sup>	Description	Link	Item no.
	<b>Transient Ground Fault<sup>2</sup></b> Simulation of ground-faults in isolated or compensated networks		P0006823
	<b>Synchronizer</b> Automatic testing of synchronizing devices and synchro-check relays		P0006822
	<b>Meter</b> Testing of single and multifunction energy meters		P0006841
	<b>Transducer<sup>3</sup></b> Testing of measurement transducers		P0006840
	<b>PQ Signal Generator</b> Simulation of power quality phenomena according to IEC 61000-4-30 and IEC 62586		P0006832
	<b>IEC 61850 Client/Server</b> Automatic SCADA testing in accordance with IEC 61850		P0006834
	<b>GOOSE Configuration</b> Testing with GOOSE according to IEC 61850		P0006831
	<b>Sampled Values Configuration</b> Testing with Sampled Values according to IEC 61850-9-2 ("9-2 LE") and IEC 61869-9		P0006833
	<b>IEDScout</b> Universal software tool for working with IEC 61850 IEDs		P0006493
	<b>CMC Swift</b> Easy and intuitive tool for simple protection and wiring checks		P0008292
	<b>RelaySimTest<sup>2</sup></b> System-based protection testing by simulating realistic power system events		P0000367
	<b>RelaySimTest Advanced Transformer Features</b> Advanced transformer features for differential protection		P0006853
	<b>RelaySimTest Motor Features</b> Motor features for asynchronous motor simulation		P0008107
	<b>CMEngine</b> Programming interface for controlling CMC test sets with user specific software		P0006842
	<b>EnerLyzer<sup>4</sup></b> Analog measurements and transient recording with CMC test sets		P0000361
	<b>TransView</b> Transient signal analysis for COMTRADE files		P0006837
	<b>ADMO light<sup>5</sup></b> Asset and maintenance management for protection systems		

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

<sup>2</sup> RelaySimTest also includes the license for Transient Ground Fault

<sup>3</sup> Requires hardware option "D" (DC measurement input)











<sup>4</sup> Requires hardware option "A" (binary and analog inputs)

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

# CMC 500 Ordering Information

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

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

# CMC 500 Ordering Information




















## Step 6 – Accessories (page 2 of 5)

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

<sup>1</sup> Is not part of the standard delivery and must be ordered separately


















# CMC 500 Ordering Information

## Step 6 – Accessories (page 3 of 5)

	Description	Item no.
	<p><b>Three-phase generator cable</b> Simplified three-phase connection between CMC test set and the test object</p> <p>Yellow, green, violet, blue 4×2.5 mm<sup>2</sup>, 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs</p>	P0008045 (YGVB)
	<p>Red, yellow, blue, black 4×2.5 mm<sup>2</sup>, 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs</p>	P0008045 (RYBB)
	<p><b>High-current injection accessories</b> For paralleling the CMC 500 outputs to create a single-phase high-current output. Rated current: 450 A (2 s on / 10 s off) Cable length: 6 m (20 ft)</p>	P0012958
	<p><b>Safety test leads with fuse</b> Offers additional protection when unintentionally short-circuiting the secondary wiring of an energized voltage transformer. 4×red, 2×black. 3 m (10 ft)</p>	P0010656
	<p><b>Transport case</b> Heavy-duty transport case with wheels and extendable handle</p>	P0007932
	<p><b>Soft bag</b> Simple dust and surface protection</p>	P0007626
	<p><b>Mounting kit for 19-inch racks</b> Allows the integration in 19-inch racks</p>	P0010658
	<p><b>Mini wireless USB adapter</b> Essential for wireless control with CMC Swift</p>	 E1636800
<b>Time synchronization</b>		
	<p><b>CMGPS 588</b> GPS controlled time synchronization unit</p>	 P0006433
	<p><b>OTMC 100p</b> PTP grandmaster clock</p>	 P0006508
	<p><b>Ethernet cable reel</b> 40 m (131 ft) cable extension for CMGPS 588 and OTMC 100p</p>	P0009396
	<p><b>EMCON 200</b> The PTP transparent ethernet media converter requires an SFP transceiver module. The transceivers listed below must be ordered separately:</p>	 P0006504
	<p><b>100BASE-FX SFP Transceiver</b> Multi-mode, 1310 nm, with LC connector</p>	E1311100
	<p><b>1000BASE-SX SFP Transceiver</b> Multi-mode, 850 nm, with LC connector</p>	E0668700
	<p><b>1000BASE-LX SFP Transceiver</b> Single-mode, 1310 nm, with LC connector</p>	E0668800

# CMC 500 Ordering Information

Step 6 – Accessories (page 4 of 5)





















	Description	Item no.
<b>Testing traveling-wave-based relays and fault locators</b>		
	<b>TWX1<sup>1</sup></b> Testing traveling wave protection relays and fault locators	 P0006385
<b>Wiring and polarity checks</b>		
	<b>CPOL3</b> Handheld polarity and wiring checker	 P0009398
<b>Low level output signals</b>		
	<b>LLX1</b> Low level output accessory for testing devices with sensor inputs. The cable sets listed below must be ordered separately:	 P0006381
	<b>LAB1 cable set</b> 4 x cables for ABB Relion 615, 620 (w. SIM0002), REX640 (w. SIM1901)	B1960000
	<b>LAB2 cable set</b> 4 x cables for ABB REF542plus	B1960100
	<b>LAB3 cable set</b> 4 x cables for ABB CSU-2	B2139500
	<b>LSE1 cable set</b> 4 x cables for Schneider Electric Sepam	B1960300
	<b>LSE2 cable set</b> 4 x cables for Schneider Electric Easergy, Schweitzer Engineering Laboratories SEL-7xx series	B1960500
	<b>LSI1 cable set</b> 4 x cables for Siemens Siprotec 4 Compact	B1960200
	<b>LST1 cable set<sup>2</sup></b> 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
	<b>LLX2</b> Low level interface for external amplifiers	 P0006382
	<b>LLX3</b> Versatile low level outputs	 P0006383

<sup>1</sup> Test set variant USX or USH recommended

<sup>2</sup> For devices according to IEC 61869-10/-11

# CMC 500 Ordering Information

## Step 6 – Accessories (page 5 of 5)

	Description		Item no.
<b>Binary in- and outputs</b>			
	ISIO 200 Binary I/O terminal		P0006498
<b>Amplifier &amp; voltage transformer</b>			
	CMS 356 6-phase current and 4-phase voltage amplifier		
	Config LL1 <sup>1</sup> 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
<b>Current measurements</b>			
	C-Probe 2 <sup>2</sup> Active AC and DC current clamp with voltage output		P0012683
	C-Shunt 1 <sup>2</sup> 1 mΩ precision shunt for current measurements up to 32 A		B0620201
	C-Shunt 10 <sup>2</sup> 10 mΩ precision shunt for current measurements up to 12.5 A		B0620301
<b>Testing energy meters</b>			
	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









<sup>1</sup> Requires LLX2 low level interface

<sup>2</sup> 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.
<b>Calibration</b>			
			
	Standard factory calibration, inspection and adjustment		included
	IEC 17025 accredited calibration		P0011739
<b>Warranty</b>			
	2 years of warranty		included
	3 years of warranty		P0006247
	4 years of warranty		P0006246
	5 years of warranty		P0001050
<b>Technical support</b>			
			
	<b>24/7 Professional technical support</b> 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.
<b>Upgrade test set variant</b>		
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
<b>Upgrade inputs</b>		
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
<b>Calibration and repair</b>		
Calibration	Standard factory calibration, inspection and adjustment	P0010475
	IEC 17025 accredited calibration (pure service) <sup>1</sup>	P0011740
	IEC 17025 accredited calibration (full service) <sup>2</sup>	P0011738
Repair	Repair and inspection	On request




<sup>1</sup> Includes IEC 17025 Found calibration

<sup>2</sup> 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.
	<b>Essential &gt; Standard</b> Adds modules: Advanced TransPlay, Pulse Ramping, Overcurrent, Distance, Advanced Distance, VI Starting, Autoreclosure, Differential, Annunciation Checker, Power, Advanced Power, CMC Swift	P0010796
	<b>Standard &gt; Enhanced</b> Adds modules: Transient Ground Fault, Synchronizer, RelaySimTest, CMEngine	P0006613
	<b>Enhanced &gt; Complete</b> 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.
<b>OMICRON Academy</b>			
	<b>Classroom and online trainings</b> Regular interactive classroom and online training courses with hands-on practice using actual electrical equipment		Book online
	<b>Customized trainings</b> Customized training courses tailored to your exact requirements, planned specifically for you at your preferred location		P0006155
	<b>Webinars</b> Regular interactive webinars by expert trainers, plus free recorded sessions available anytime		Book online
	<b>OMICRON eCademy</b> Digital learning platform from OMICRON		Included

## Individual support

	<b>Creation of PTL templates</b> 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
	<b>OMICRON Engineering services</b> 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.



*Emotions are energy. Our energy moves.*

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