



# CMC 500

Ordering Information

## Ordering instructions

### Step 1: 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.

### Step 2: Test set variants

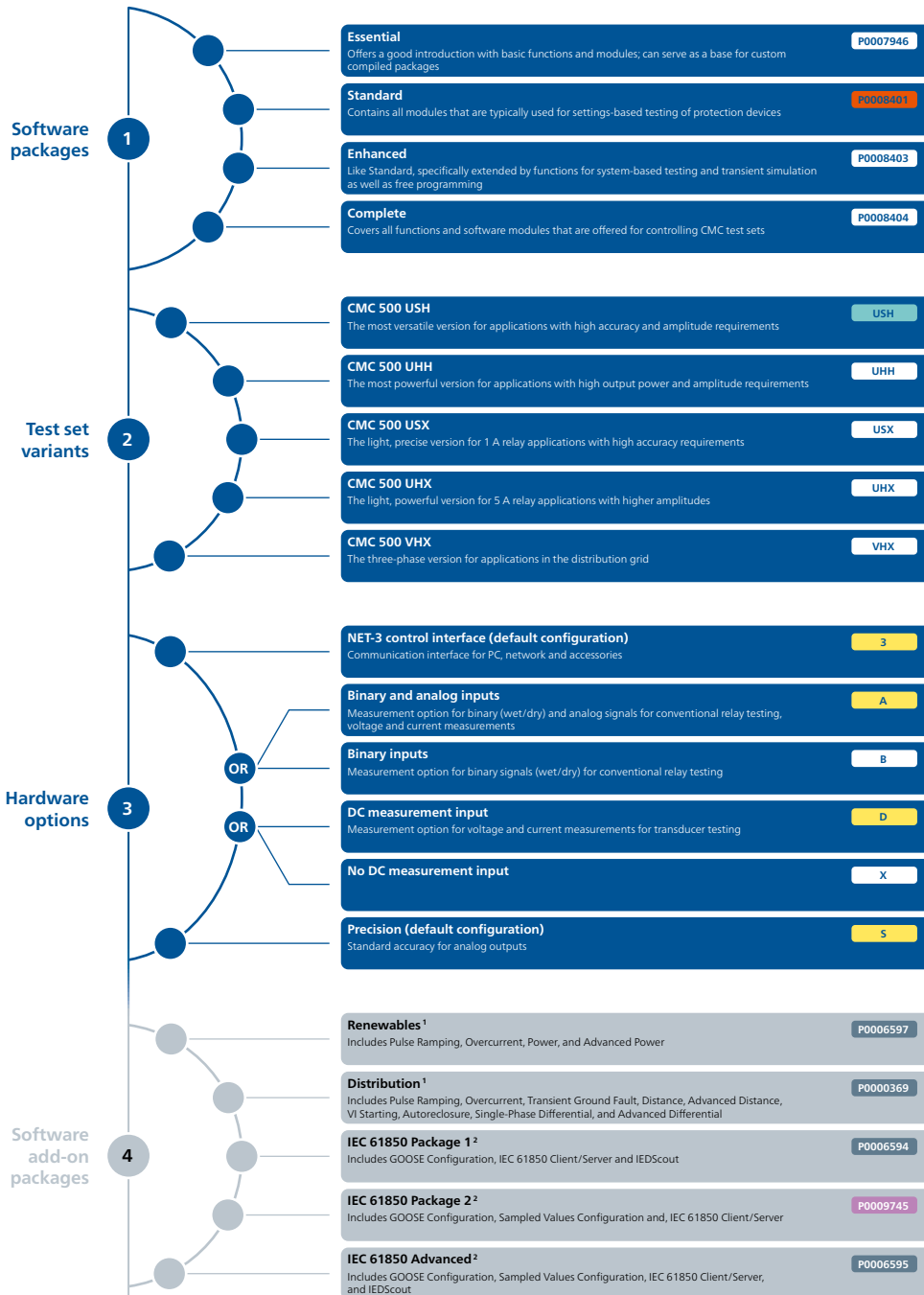
Choose from different device variants.

### Step 3: Hardware options

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

### 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.



### Example order number

Description	Item no.	(Configuration)
CMC 500 USH Standard package	P0008401	(USH - 3ADS)

IEC 61850 Package 2	P0009745
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Order numbers: P0008401 (USH-3ADS), P0009745

- Mandatory selection
- Optional selection

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

<sup>2</sup> Selectable for Essential, Standard, and Enhanced Software Package

**Step 5: Software modules**

Choose individual software modules in addition to the software packages selected in steps 1 and 4. On the next page, you will find a complete overview of all available modules. This step is also optional.

Software modules

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**Single software modules**

The software scope can be extended at any time by ordering additional single modules

Software modules

5

Software modules		Item no.	Description	Software packages			
				Essential	Standard	Enhanced	Complete
Test Universe modules	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		Generation of signals with superimposed harmonics	✓	✓	✓	✓
	Ramping		Determining magnitude, phase, and frequency thresholds by ramping definitions	✓	✓	✓	✓
	TransPlay		Playback of Comtrade files, recording of binary input status	✓	✓	✓	✓
	Advanced TransPlay <sup>1</sup>	P0006829	Playback and processing of COMTRADE, PL4, or CSV files	○	✓	✓	✓
	Pulse Ramping	P0006818	Determining magnitude, phase, and frequency thresholds by ramping definitions	○	✓	✓	✓
	Overcurrent	P0006821	Automatic testing of positive/negative/zero sequence overcurrent characteristics	○	✓	✓	✓
	Distance	P0006816	Impedance element evaluations using single-shot definitions in the Z-plane	○	✓	✓	✓
	Advanced Distance <sup>1</sup>	P0006591	Impedance element evaluations using automatic testing modes	○	✓	✓	✓
	VI Starting	P0006820	Testing of the voltage dependent overcurrent starting function of distance relays	○	✓	✓	✓
	Autoreclosure	P0006819	Testing of the autoreclosure function with integral fault model	○	✓	✓	✓
	Advanced Differential <sup>1</sup>	P0000296	Comprehensive three-phase differential relay testing (four modules)	○	✓	✓	✓
	Annunciation Checker	P0006830	Verification of the correct marshalling and wiring of protection devices	○	✓	✓	✓
	Power	P0006835	Testing with visualization and assessment in the P-Q plane (basic)	○	✓	✓	✓
	Advanced Power <sup>1</sup>	P0006836	Testing with visualization and assessment in the P-Q plane (enhanced)	○	✓	✓	✓
	Transient Ground Fault <sup>2</sup>	P0006823	Simulation of ground-faults in isolated or compensated networks	○	○	✓	✓
	Synchronizer	P0006822	Automatic testing of synchronizing devices and synchro-check relays	○	○	✓	✓
Meter	P0006841	Testing of single and multifunction energy meters	○	○	○	✓	
Transducer <sup>3</sup>	P0006840	Testing of measurement transducers	○	○	○	✓	
PQ Signal Generator	P0006832	Simulation of power quality phenomena according to IEC 61000-4-30 and IEC 62586	○	○	○	✓	
IEC 61850	IEC 61850 Client/Server	P0006834	Automatic SCADA testing in accordance with IEC 61850	○	○	○	✓
	GOOSE Configuration	P0006831	Testing with GOOSE according to IEC 61850	○	○	○	✓
	Sampled Values Configuration	P0006833	Testing with Sampled Values according to IEC 61850-9-2 ("9-2 LE") and IEC 61869-9	○	○	○	✓
Additional tools	IEDScout	P0006493	Universal software tool for working with IEC 61850 IEDs	○	○	○	○
	CMC Swift	P0008292	Easy and intuitive tool for simple protection and wiring checks	○	✓	✓	✓
	RelaySimTest <sup>2</sup>	P0000367	System-based protection testing by simulating realistic power system events	○	○	✓	✓
	RelaySimTest Adv. Transformer Features	P0006853	Advanced transformer features for differential protection	○	○	○	✓
	RelaySimTest Motor Features	P0008107	Motor features for asynchronous motor simulation	○	○	○	✓
	CMEngine	P0006842	Programming interface for controlling CMC test sets with user specific software	○	○	✓	✓
	EnerLyzer <sup>4</sup>	P0000361	Analog measurements and transient recording with CMC test sets	○	○	○	✓
	TransView	P0006837	Transient signal analysis for COMTRADE files	○	○	○	✓
	ADMO light		Asset and maintenance management for protection systems	✓	✓	✓	✓

Included in package  
 Optionally available

<sup>1</sup> The Advanced modules include their basic counter parts (e.g. Advanced Power includes the Power Module)  
<sup>2</sup> RelaySimTest also includes the licenses for Transient Ground Fault and NetSim  
<sup>3</sup> Requires hardware option "D" (DC measurement input)  
<sup>4</sup> Requires hardware option "A" (binary and analog inputs)

**Step 6: Accessories**  
 In the final step, you can 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.

## Accessories 6

Accessory	Item no.	Description
<b>Standard accessories</b>		
1x Country-specific power cord <sup>1</sup>	P0000279 <sup>1</sup>	These accessories are part of the standard delivery
1x Spare INTERLOCK key	P0008305	C13 connector, 2.5 m (8 ft)
1x Ethernet patch cable	E1664400	Spare INTERLOCK key in case one is lost or misplaced
1x USB connection cable	P0007555	To connect CMC test sets with Ethernet connection to PC or network, 3 m (10 ft)
8x Test leads, red	P0007815	To connect CMC test sets with USB connection to a PC, 2 m (6.6 ft)
4x Test leads, black	P0007816	With 4 mm (0.16 in) safety plugs, 3 m (10 ft)
12x Flexible terminal adapters	E0439201	With 4 mm (0.16 in) safety plugs, 3 m (10 ft)
8x Test lead jumpers	E0439300	For screw-type terminals
1x Grounding cable	B1889700	For paralleling current triples up to 32 A and for shorting neutrals of binary inputs
1x Accessory bag	P0007627	With battery clamp and plug, 1 x 6 mm <sup>2</sup> , 6 m (20 ft)
<b>Wiring accessory package</b>		
12x Flexible test lead adapters for narrow terminals	E2106200	300 x 100 x 210 mm (12 x 4 x 8 in) (W x H x D)
6x Flexible test lead adapters with retractable sleeve, red	E0542801	Various adapters for connecting test objects
6x Flexible test lead adapters with retractable sleeve, black	E0542901	With 4 mm (0.16 in) safety plug for connections to narrow terminals
8x Test lead jumpers	E0439300	For connections to non-safety sockets
4x Crocodile clips, red	E0343100	For connections to non-safety sockets
4x Crocodile clips, black	E0343600	For paralleling current triples up to 32 A or shorting neutrals of binary inputs
12x Flexible terminal adapters	E0439201	For contacting pins or screw bolts
12x Solid terminal adapters	E0202200	For contacting pins or screw bolts
20x Cable lug adapters	E0542600	For screw-type terminals
10x Cable lug adapters	E0542700	For screw-type terminals
1x Test lead, green-yellow	P0010292	For M4 (0.15 in) screws
10x Cable ties (velcro fastener)	E0544100	For M5 (0.2 in) screws
1x Accessory bag	P0007627	To ground test objects, e.g. in a lab environment, 3 m (10 ft)
<b>Three-phase generator cable</b>		
Yellow, green, violet, blue	P0008045 (YGVB)	Black, 150 mm (6 in)
Red, yellow, blue, black	P0008045 (RYBB)	300 x 100 x 210 mm (12 x 4 x 8 in) (W x H x D)
<b>Safety test leads with fuse</b>		
	P0010656	Simplified three-phase connection between CMC test set and the test object
<b>Transport case</b>		
	P0007932	4 x 2.5 mm <sup>2</sup> , 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs
<b>Soft bag</b>		
	P0007626	4 x 2.5 mm <sup>2</sup> , 3 m (10 ft), with color-coded 4 mm (0.16 in) safety plugs
<b>Mounting kit for 19-inch racks</b>		
	P0010658	To avoid danger if a mistake in the test setup causes a short circuit in the secondary wiring of a VT
		Heavy-duty transport case with wheels and extendable handle
		Simple dust and surface protection
		Allows the integration in 19-inch racks

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

Accessories **6**

Accessory	Item no.	Description
Mini wireless USB adapter	E1636800	For wireless control
CMGPS 588	P0006433	GPS controlled time synchronization unit
OTMC 100p portable	P0006508	PTP grandmaster clock
TICRO 100	P0000604	IEEE1588/PTP time converter
EMCON 200	P0006504	PTP transparent ethernet media converter
100BASE-FX SFP Transceiver	E1311100	Multi-mode, 1310 nm, with LC connector
1000BASE-SX SFP Transceiver	E0668700	Multi-mode, 850 nm, with LC connector
1000BASE-LX SFP Transceiver	E0668800	Single-mode, 1310 nm, with LC connector
TWX1 <sup>1</sup>	P0006385	Testing traveling wave protection relays and fault locators
CPOL3	P0009398	Handheld polarity and wiring checker
LLX1	P0006381	Low level output accessory for testing devices with sensor inputs
LAB1 cable set	B1960000	ABB Relion 615, 620 (w. SIM0002), REX640 (w. SIM1901)
LAB2 cable set	B1960100	ABB REF542plus
LAB3 cable set	B2139500	ABB CSU-2
LSE1 cable set	B1960300	Schneider Electric Sepam
LSE2 cable set	B1960500	Schneider Electric Easergy, Schweitzer Engineering Laboratories SEL-751
LSI1 cable set	B1960200	Siemens Siprotec 4 Compact
LST1 cable set <sup>2</sup>	P0008935	ABB Relion 615, 620 (w. SIM0005), REX640 (w. SIM1902), Siemens 7SY82, Sprecher Automation SPRECON-EDIR
LLX2	P0006382	Low level interface for external amplifiers
LLX3	P0006383	Versatile low level outputs
ISIO 200	P0006498	Binary I/O terminal
CMS 356	P0001357	6-phase current and 4-phase voltage amplifier
VBO3	P0006276	Three-phase voltage transformer for up to 600 V (L-N)
Current clamp <sup>3</sup>	P0008992	Active AC and DC current clamp with voltage output
C-Shunt 1 <sup>3</sup>	B0620201	1 mΩ precision shunt for current measurements up to 32 A
C-Shunt 10 <sup>3</sup>	B0620301	10 mΩ precision shunt for current measurements up to 12.5 A
OSH 256R + ASH1	P0009603	Optical scanning head for relay testing
OSH 256 + ASH1	P0009600	Scanning head for meters with optical pulse LEDs
SH 2015 + ASH1	P0009601	Scanning head for meters with magnetic attachment
TK 326 + ASH1	P0009602	Scanning head for electromechanical meters with rotor marks

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

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

<sup>3</sup> Requires hardware option "A" (binary and analog inputs)