CMC 356

Ordering Information

OMICRON

Ordering instructions

Step 1: Hardware
The CMC 356 is the main hardware unit of your choice.

Step 2: Software package
Choose 1 of 5 software packages according to your needs. This is considered the basis for the software scope and can be extended in steps 4 and 5 at any time.

Step 3: Hardware options
Choose between different hardware options, with BIN and LLO-1 being the standard configuration, while ELT-1 and LLO-2 extend the capabilities. You can always decide between BIN or ELT-1 and LLO-1 or LLO-2 respectively.

Step 4: Software add-on packages
Choose from a set of software add-on packages tailored to a specific application or use-case. This step is optional.

Step 5: Software modules
Choose individual software modules in addition to the selected software packages in steps 2 and 4. On the next page you will find a complete overview of all available modules. This step is also optional.

Hardware 1

Main unit
CMC 356 – Universal relay test set and commissioning tool

Software package 2

CMControl P App[1] — P0000805
Tablet app for easy manual testing of protection and measurement devices

Essential — P0000808
Offers a good introduction with basic functions and modules; can serve as a base for custom compiled packages

Standard — P0000629
Contains all modules that are typically used for settings-based testing of protection devices

Enhanced — P0000809
Like Standard, specifically extended by functions for system-based testing and transient simulation as well as free programming

Complete — P0000816
Covers all functions and software modules that are offered for controlling CMC test sets

Hardware options (Configuration) 3

OR

BIN (Standard configuration) — BIN
Measurement option for binary signals (wet/dry) for conventional relay testing

ELT-1 — ELT
Measurement option for binary (wet/dry) and analog signals for conventional relay testing, transducer testing, voltage and current measurements

OR

LLO-1 (Standard configuration) — LLO1
Low-level output option with 6 high-accuracy analog signal sources

LLO-2 — LLO2
Low-level output option with 12 high-accuracy signal sources

Software add-on packages 4

Renewables[2] — P0006597
Includes Pulse Ramping, Overcurrent, Power and Advanced Power

Distribution[2] — P0000369
Includes Pulse Ramping, Overcurrent, Transient Ground Fault, Distance, Advanced Distance, VI Starting, Autoreclosure, Single-Phase Differential and Advanced Differential

Measurement Equipment Testing[3] — P0000411
Includes Meter, Transducer and PQ Signal Generator

IEC 61850 Basic[3] — P0006594
Includes GOOSE Configuration, IEC 61850 Client/Server and IEDScout

IEC 61850 Advanced[3] — P0006595
Includes GOOSE Configuration, Sampled Values Configuration, IEC 61850 Client/Server and IEDScout

Software modules 5

Single software modules
The software scope can be extended at any time by ordering additional single modules (see next page)

Example order number

CMC package	Hardware options	Item no. (Configuration)
CMC 356 Standard	BIN, LLO-1	P0000629 (BIN LLO1)

CMC software add-on packages	Item no.
IEC 61850 Basic	P0006594

[1] Also available on a dedicated front panel control device (Item no. P0000973)
[2] Selectable for Essential Software Package
[3] Selectable for Essential, Standard, and Enhanced Software Package

Software modules	Item no.	Description	Software packages: Essential	Standard	Enhanced	Complete
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	✓	✓	✓	✓
TransPlay		Playback of COMTRADE files, recording of binary input status	✓	✓	✓	✓
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	✓	✓	✓	✓
Pulse Ramping	P0006818	Determining magnitude, phase, and frequency thresholds by pulse ramping definitions		✓	✓	✓
CMControl P App	P0000344	Quick and easy manual testing of protection and measurement devices		✓	✓	✓
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 [1]	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		✓	✓	✓
Single-Phase Differential	P0006824	Single-phase tests of the operating characteristic and the inrush blocking		✓	✓	✓
Advanced Differential [1]	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 [1]	P0000341	Testing with visualization and assessment in the P-Q plane (enhanced)		✓	✓	✓
Advanced TransPlay	P0006829	Playback and processing of COMTRADE, PL4, or CSV files		✓	✓	✓
Transient Ground Fault	P0006823	Simulation of ground-faults in isolated or compensated networks			✓	✓
Synchronizer	P0006822	Automatic testing of synchronizing devices and synchro-check relays			✓	✓
CMEngine	P0006842	Programming interface for controlling CMC test sets with user specific software			✓	✓
RelaySimTest [2]	P0000367	System-based protection testing by simulating realistic power system events			✓	✓
RelaySimTest Adv. Transformer Features	P0006853	Advanced transformer features for differential protection in RelaySimTest				✓
RelaySimTest Motor Features	P0008107	Motor features for asynchronous motor simulation in RelaySimTest				✓
Meter	P0006841	Testing of single and multifunction energy meters				✓
Transducer [3]	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 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				✓
EnerLyzer [3]	P0006601	Analog measurements and transient recording with CMC test sets				✓
TransView [4]	P0006837	Transient signal analysis for COMTRADE files				✓
IEDScout	P0006493	Universal software tool for working with IEC 61850 IEDs				

[1] The Advanced modules include their basic counter parts (e.g. Advanced Power includes the Power Module)
[2] RelaySimTest license also includes the licenses for Transient Ground Fault and NetSim
[3] Requires ELT-1 hardware option (configuration)
[4] TransView is included with EnerLyzer but can also be ordered seperately

✓ Included in package
Optionally available

Step 6: Accessories
In the last step, you can choose from a large number of basic accessories and others, tailored to a specific application or use-case. This step is optional, but recommended to get the full potential of the solution.

Accessory	Item no.	Description
Wiring accessory package	B1764601	Various adapters for connecting test objects to CMC test sets
Generator combination cable		Three-phase connection between CMC test set and the test object
Yellow, green, violet, blue	B1328000	
Red, yellow, blue, black	B1328100	
Mini wireless USB adapter	E1636800	For wireless control of a CMC test set
Transport case	B0679403	Heavy-duty transport case with wheels and extendable handle for safe & easy transport and shipping
Trolley/Backpack	E1636000	Trolley / Backpack for simple mechanical protection
CMGPS 588	P0006433	GPS controlled time synchronization unit
CMIRIG-B	P0006386	Interface box for sending or receiving the IRIG-B protocol or PPS signals
TICRO 100	P0000604	IEEE1588/PTP time converter
OTMC 100p portable	P0006508	PTP grandmaster clock
EMCON 200	P0006504	PTP transparent Ethernet media converter
TWX1	P0006385	Testing traveling wave protection relays and fault locators
CPOL3	P0009398	Handheld polarity and wiring checker
CMLIB REF6xx	P0006379	Low level interface adapter for ABB Relion devices with sensor inputs
REF 54x cable connector	B0559600	Cable connector for ABB REF 54x devices with sensor inputs
CMLIB 7Sx8	P0006380	Low level interface adapter for Siemens Siprotec Compact devices with sensor inputs
CMLIB A	P0006378	Low level signal connector
Easergy cables[1]	B1734800	Adapter cables for Schneider Electric Easergy and Schweitzer Engineering Laboratories SEL-751 devices with sensor inputs
RIB1	P0006393	Low level isolation box
ISIO 200	P0006498	Binary I/O terminal
RXB1	P0006392	Binary output extension
CMTAC 1	P0006278	Rectifier to use AC trigger signals
SER1	P0006388	Scanning equipment for scanning the status indication LEDs of protection relays
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[2]	P0008992	Active AC and DC current clamp with voltage output
C-Shunt 1[2]	B0620201	1 mΩ precision shunt for current measurements
C-Shunt 10[2]	B0620301	10 mΩ precision shunt for current measurements
ARC 256x	P0006279	Arc flash initiator for testing arc flash protection systems
SEM 1	P0006391	Scanning head for testing meters with optical pulse output
SEM 2	P0006390	Scanning head for testing meters with rotating disc or optical pulse output
SEM 3	P0006389	Magnetic scanning head for testing meters with optical pulse output
CMLIB B	P0006377	For tests with reference meters and to access the binary transistor outputs

[1] Requires CMLIB A
[2] Requires ELT-1 hardware option