

EUROPE'S LARGEST SELECTION OF TEST & MEASUREMENT EQUIPMENT FOR HIRE

INLEC.COM

DATA-SHEET



Nationwide Low Call
0333 6000 600

WHY BUY
WHEN YOU CAN HIRE

CMC 356 – *The workhorse*

The Universal Relay Test Set and Commissioning Tool



CMC 356 – Universal Relay Testing and Commissioning

CMC 356 – The Workhorse

The CMC 356 is the universal solution for testing all generations and types of protection relays. Its powerful six current sources (three-phase mode: up to 64 A / 860 VA per channel) with a great dynamic range, make the unit capable of testing even high-burden electromechanical relays with very high power demands.

The CMC 356 is the first choice for applications requiring the highest versatility, amplitude and power. Commissioning engineers will particularly appreciate its ability to perform wiring and plausibility checks of current transformers, by using primary injection of high currents from the test set.



2 counter inputs

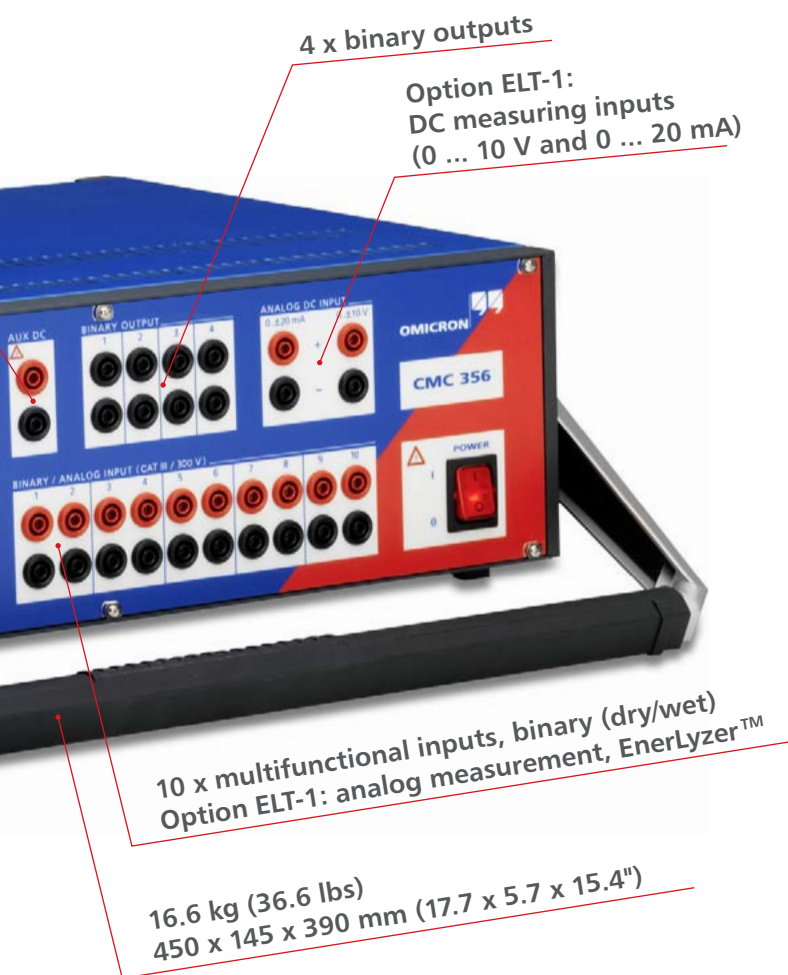
4 binary outputs (transistor)

Interface for CMGPS or CMIRIG-B

Low level outputs 1 - 6
and 7 - 12 (with option LLO-2)
($\pm 10 V_{PK}$)

2 Ethernet interfaces
For PC control or CMControl and
IEC 61850 GOOSE and Sampled Values





The analog test signals are generated digitally using DSP technology. This, in combination with the use of additional error correction algorithms, results in [accurate testing signals](#) even at small amplitudes.

The six current and four voltage [output channels](#) are continuously and independently adjustable in amplitude, phase and frequency. All outputs are overload and short-circuit proof and are protected against external high-voltage transient signals and over-temperature.

The [integrated network interface](#) supports comprehensive testing in the IEC 61850 environments using optional GOOSE simulation and subscription and Sampled Values simulation functionality.

Up to 12 independent channels with [low-level signals](#) are available at the back of the test set, which can be used to test relays which have a low-level input facility or to control external amplifier units.

By utilizing the EnerLyzer software option, the ten binary inputs of a CMC 356 equipped with the ELT-1 hardware option alternatively work as [analog measurement inputs](#). The unit then can also be used as a multifunctional multimeter and transient recorder.

Besides its operation with the powerful Test Universe software running on a PC, the CMC 356 can also manually be controlled with the highly flexible [CMControl unit](#).



CMControl-6 Front Panel Control (option)

CMC 356: 6 Phase Current + 4 Phase Voltage Test Set and Commissioning Tool

Protection Relay Test Set

- High-burden electromechanical relays
- Static relays
- Numerical relays
- IEC 61850 IEDs (GOOSE and Sampled Values)
- Relay panels
- End-to-End testing with GPS or IRIG-B
- Busbar protection (up to 22 signal generators)

Power System Simulator

- Transient fault simulation
- Power swing
- CT saturation simulation
- CB simulation
- Rogowski coil simulation
- Compensated network
- Transient playback (COMTRADE, PL4 (EMTP), ...)

Programmable Voltage and Current Source

- Production quality assurance
- Manufacturer of substation equipment
- Research & development

Universal Tool for Substation Commissioning

- Checking SCADA annunciations
- Burden measurement
- CT/VT polarity checker
- Wiring checker
- Plausibility check for CT/VT with primary injection

Portable 10-Channel Measurement Device¹

- Transient recording (trigger: binary, PQ, GPS)
- Multimeter for: I, V, f, S, P, Q, $\cos \varphi$...
- Trend recording for: I, V, f, S, P, Q
- Harmonics analysis



¹ With ELT-1 hardware option and EnerLyzer™ software option

Key Features

- Very powerful current sources for testing high-burden electromechanical relays
- High current amplitudes for 5 A relay testing
- High accuracy and versatility for testing static and numerical relays of all types
- Integrated network for testing IEC 61850 IEDs
- Continuous synchronized outputs with CMIRIG-B (e.g. for PMU or MU testing)
- Primary injection capabilities for commissioning tasks
- Test Universe software with unrivaled manual and automated testing functionality
- Front panel control with the unique CMControl (option)
- 10-channel analog measurement and transient recording functionality (option)
- Reliable and robust

Additional Benefits

OMICRON provides

- Worldwide high quality technical support
- Platforms for an international knowledge exchange
- Training courses designed for electric power system technicians and engineers

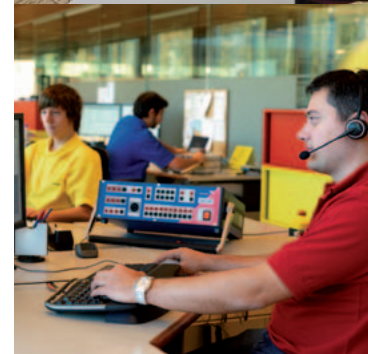
CMC 356 Ordering Information

CMC 356 with Test Universe Software	
VE002801	CMC 356 Basic
VE002802	CMC 356 Protection
VE002803	CMC 356 Advanced Protection

CMC 356 with CMControl (without Test Universe Software)	
VE002820	CMC 356 with CMControl-6

The CMControl can also be ordered as add-on together with a CMC 356 with Test Universe software or as a later upgrade.

CMC 356 Hardware Options	
VEHO2801	ELT-1 EnerLyzer and Transducer hardware option (if ordered with a new CMC 356)
VEHO2802	ELT-1 EnerLyzer and Transducer hardware factory upgrade (for used CMC 356)
VEHO2803	LLO-2 Additional 6 low level outputs option (if ordered with a new CMC 356)
VEHO2804	LLO-2 Additional 6 low level outputs factory upgrade (for used CMC 356)



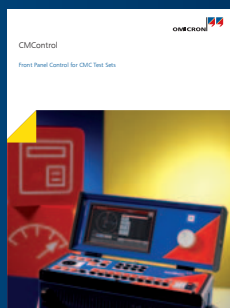
OMICRON is an international company serving the electrical power industry with innovative testing and diagnostic solutions. The application of OMICRON products allows users to assess the condition of the primary and secondary equipment on their systems with complete confidence. Services offered in the area of consulting, commissioning, testing, diagnosis, and training make the product range complete.

Customers in more than 140 countries rely on the company's ability to supply leading edge technology of excellent quality. Broad application knowledge and extraordinary customer support provided by offices in North America, Europe, South and East Asia, Australia, and the Middle East, together with a worldwide network of distributors and representatives, make the company a market leader in its sector.

The following publications provide detailed information on the products described in this brochure and their applications:



*Product catalog
(secondary equipment)*



CMControl brochure



*Testing Solutions for
Protection Systems*

For a complete list of available literature please visit our website.

Americas

OMICRON electronics Corp. USA
12 Greenway Plaza, Suite 1510
Houston, TX 77046, USA
Phone: +1 713 830-4660
+1 800-OMICRON
Fax: +1 713 830-4661
info@omicronusa.com

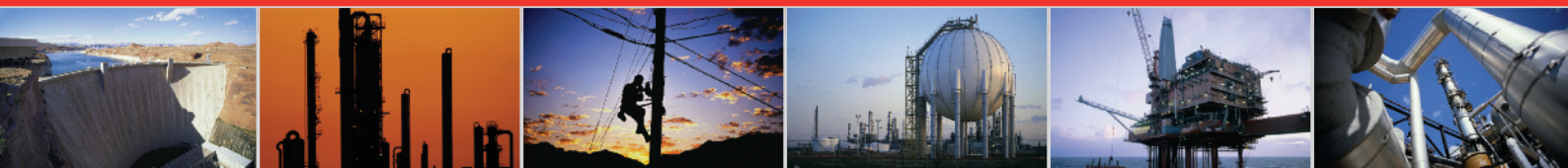
Asia-Pacific

OMICRON electronics Asia Limited
Suite 2006, 20/F, Tower 2
The Gateway, Harbour City
Kowloon, Hong Kong S.A.R.
Phone: +852 3767 5500
Fax: +852 3767 5400
info@asia.omicron.at

Europe, Middle East, Africa

OMICRON electronics GmbH
Oberes Ried 1
6833 Klaus, Austria
Phone: +43 5523 507-0
Fax: +43 5523 507-999
info@omicron.at

INLEC, supporting you to deliver a world class service, every day, in every sector ...



OUR COMMITMENT TO YOU

A wealth of knowledge and experience.

You can take advantage of expert advice to ensure you get the best, most appropriate and cost effective equipment for the job. We supply a wide variety of industries, so if there is another way to do the job or save you time and money we'll pass on the benefit of our experience for free.

Honest advice, just a phone call away.

If we don't have a particular item, rather than hiring you something that won't do the job, we would rather direct you to an alternative supplier. You will always be provided with full instructions and if you still need help, call our technical team on Nationwide Low Call 0333 6000 600. Our aim is to save you time, frustration and money.

Top quality equipment from major manufacturers.

With Inlec you'll get the most accurate, reliable and well-maintained equipment available. Prices are regularly reviewed to ensure you always enjoy the best value for money. We have made a significant investment in test equipment so we ensure that it's well packed to minimise damage and delay.

We really do listen to you.

You won't waste your time contacting Inlec. Every request for equipment is logged and carefully considered. Listening to our customers helps keep our product range up to date and relevant. If you are unhappy about any aspect of our service please let us know so we can put it right.

YOUR 5 WAY GUARANTEE

1 GUARANTEE SAME DAY DESPATCH

We understand why prompt delivery is important to you. So, if we confirm your order before 3pm, you are guaranteed same day despatch.

2 OUR PRICE GUARANTEE

Inlec guarantee you real value for money. Our price match policy is simple - if you can hire the same product for less elsewhere, we guarantee to match that price and reduce it by a further 10% of the difference - and still deliver our industry leading technical and customer support.

For full details check our price-match guarantee online

3 TOP QUALITY GUARANTEED

All equipment is thoroughly checked prior to dispatch to ensure you receive it in full, safe working order. Your shipment will be securely packed and include manufacturer's instructions, accessories or consumables and a valid calibration certificate where appropriate. In addition, Inlec offer a 24 hour replacement service if you decide the equipment is not suitable for your application*.

4 FRIENDLY, KNOWLEDGEABLE ADVICE GUARANTEED

Inlec are happy to provide you with free advice, from an unbeatable team of experienced, knowledgeable and friendly engineers and hire experts.

5 YOUR GUARANTEE OF THE BEST CUSTOMER SERVICE

Throughout your hire we will work hard to ensure you enjoy the very best in support and service from Inlec. We guarantee you won't find better service anywhere in the industry.

*subject to availability and conditions

Europe's leading Test Equipment Hire Specialist



LAB NO. 0535



Nationwide Low Call **0333 6000 600**
Online: **www.inlec.com**

Inlec UK Ellerbeck Way, Stokesley Business Park, Stokesley N Yorkshire TS9 5JZ United Kingdom



CERT. NO. GB93/1773



Accredited Contractor