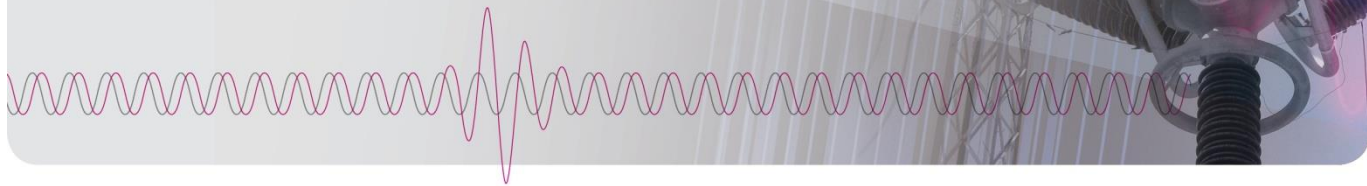


ACTAS C | CF | CCF

SPECIFICATIONS



System concept High-precision test systems for function tests on various types of switchgear device, including circuit breakers, disconnectors or earthing switches, regardless of the type of drive unit. They come in a mobile, 38 U industrial cabinet. The built-in acquisition unit ACTAS L is used for real-time data acquisition to execute and monitor test steps. ACTAS C systems can be operated using an integrated or external industrial PC on which the MS Windows™ operating system and the ACTAS software package has been installed.

The inputs and outputs are connected flexibly via Harting industrial plug connectors, making the test systems particularly suitable for use in laboratory and production environments. Digital and analog control outputs enable voltage or current sources to be controlled automatically, allowing fully automatic tests. In combination with PROMET, three-pole dynamic resistance measurements can be carried out on up to four interrupter units per pole.

Control outputs Electronic switching outputs (IGBT) for single or three-phase control of the closing and opening coils. All operating sequences can be configured and output in increments of 1 ms.

IGBTs for controlling the release coils	Voltage	300 VAC/DC	Intrinsically safe via short-circuit and overload protection
	Current	100 A peak	
	Time resolution	0.1 ms	
	Accuracy	±0.02 ms	
Binary output	Relay output	30 VDC / 2 A (resistive load)	(max. 220 VDC)
Analog outputs for controlling external voltage sources	Analog outputs to set the desired values and the voltage waveform and to release connected sources.		
	Output range	0...10 VDC / 1 mA	Load impedance >10 kΩ
Power supply to external sensors	Reference voltage for analog sensors	10 VDC	
	Supply voltage for incremental sensors	5 VDC or 10 VDC, can be selected via jumper	

Measurement inputs	General	
	Recording duration	Max. 13.33 min at 500 Hz, Max. 8 s at 50 kHz
Time resolution	0.02 ms	
Time accuracy	±0.005 ms	
A/D-conversion	16 bit	
Accuracy	0.05% of range	
Analog inputs	Oversampling	200 kHz per measurement channel (physical)
	Sampling rates	500 Hz...50 kHz, adjustable in steps additional modules Aux/Rel and CF work permanently on 10 kHz for binary signals
	Activation range	Main contacts <30 Ω Resistive contacts (PIR) >30 Ω...10 kΩ combined with main contact inputs
	Measuring range close/open coil current	5 ADC / 30 ADC / 100 A peak
	Coil voltage	300 VAC/DC
	Measuring range motor	20 A RMS/ 50 A RMS / 100 A peak
	Motor voltage	500 VAC/DC
	Sensor inputs	±20 mA ±10 VDC
	Protection	Galvanic isolations 2.5 kV, device isolated against earth Galvanic isolations 2.5 kV, all measurement inputs isolated against earth

	Binary inputs	Time resolution Sampling rate Activation range 24...300 VDC, adjustable Auxiliary contacts	0.02 ms 50 kHz External supply, activation range configurable
	Incremental inputs for digital travel transducers	Limit frequency	200 kHz (70 kHz for CF modules)
Software	The system has been specially developed for the automated execution of all types of tests on switchgear devices. For this purpose the system is equipped with the complete ACTAS software package. It provides the following functions, for example:		
	Automation functions	<ul style="list-style-type: none"> - Execution and monitoring of automatic test sequences and repetitive operations - Configurable dialogue boxes for entering results which have been determined manually - Interfaces for data import and export - Database integration and statistics function - Test object identification via barcode/RFID - Automated archiving of test data - Automatic allocation of transducer sets - Signalization of test status, e.g. by signaling device - User log-in and log-out during operation - Central data management - Automatic selection and control of operating circuits - Motor monitoring both during and independently of tests 	
Complete system	Operation, system control, data storage and evaluation are carried out using a standard, external Windows PC with the ACTAS 2.60 software.		
	User interface	ACTAS system software for the parameterization, execution and evaluation of switchgear tests under Windows 7/8.1/10	
	Power supply	The cabinet is powered via a mains supply panel and multi-pole industrial plug connectors with a maximum load of 32 A. There is an additional fused 25 A output integrated in the emergency stop circuit for supplying external sources.	
	Measurement connections	All the cable connections on the cabinet are plug-in connections which can be secured to prevent them from becoming undone. Test objects are connected to the system via modular multi-contact industrial plug connectors. <u>Separate connection panels are provided for inputs and outputs.</u>	
	Signaling	The indicator panel on the front of the cabinet uses LEDs to indicate the status of all releases and of the safety circuit as well as showing which coil circuit is selected. Customized LED indicator panels can be added if required, e.g. to display the status of further binary inputs.	
	Safety equipment	The cabinet can be disconnected from the power supply by means of the power switch. The power switch can be secured mechanically to prevent it from being switched on again. All supply and test voltages issued by the system can be switched off by means of an emergency stop button located on the front of the cabinet. The emergency stop system prevents restart when the emergency stop button is reset. The system features an industrial plug connection enabling further emergency stop buttons to be looped in by the customer. In addition, a safety binary input is available for monitoring external door contacts, for example. The status of the binary input is monitored and indicated by the system. The releases of all sources are blocked when the safety circuit is open.	
	Housing	38 U standard industrial cabinet on castors The cabinet is equipped with a thermostatically controlled fan module. The lockable rear panel can be opened to access the wiring board.	
	PC interfaces	1 x RJ45 Ethernet 1 x serial RS422	
	KoCoS interfaces	4 x control of external devices	
	Environment	Operating temperature Storage temperature Relative humidity Protection	0...50°C -20...60°C 5...90% non-condensing IP20
	CE conformity	EN 61010-1: 2011 Safety requirements for electrical equipment for measurement, control, and laboratory use EN 61326-1: 2013 Electrical equipment for measurement, control and laboratory use - EMC requirements	

Product specifications		ACTAS C160	ACTAS C320	ACTAS CF80
Control outputs	Closing coils	3	3	1
	Opening coils	3	3	1
	Relay control outputs	8	14	-
	Analog control outputs 0...10 VDC	4	6	2
Analog measurement inputs	Coil current	6 x (I/O)	6 x (I/O)	2 x (I/O)
	Coil/station voltage	1	3	1
	Motor current via shunt	1	3	1
	Motor voltage	1	3	1
	Sensor (dig./inc.)	6	9	1 per drive position
	Sensor (+/-10 V)	6	9	-
	Sensor (0...20 mA)	2	3	-
	Main and PIR contacts	3 x 4	3 x 6	3 x 2
Binary measurement inputs	Auxiliary contacts	16 + 36 (10 kHz)	24 + 72 (10 kHz)	-
Reference voltage for external sensors		2 x 10 VDC / 200 mA	3 x 10 VDC / 200 mA	-
Additional connections for external devices	PC	1	1	1
	PROMET/voltage sources	3	3	1
Housing	Dimensions (W x H x D)		19", 38 U 600 mm x 1840 mm x 900 mm	

Product specifications		ACTAS CCF160	ACTAS CCF320
Control outputs	Closing coils	3	3
	Opening coils	3	3
	Relay control outputs	8 (+ 1 per drive position)	14 (+ 1 per drive position)
	Analog control outputs 0...10 VDC	4	6
Analog measurement inputs	Coil current	6 x (I/O)	6 x (I/O)
	Coil/station voltage	1	3
	Motor current via shunt	1	3
	Motor voltage	1	3
	Sensor (dig./inc.)	6 (+ 1 per drive position)	9 (+ 1 per drive position)
	Sensor (+/-10 V)	6	9
	Sensor (0...20 mA)	2	3
	Main and PIR contacts	3 x 4	3 x 6
Binary measurement inputs	Auxiliary contacts	16 + 36 (10 kHz) 14 per drive (10 kHz)	24 + 72 (10 kHz) 14 per drive (10 kHz)
Reference voltage for external sensors		2 x 10 VDC / 200 mA	3 x 10 VDC / 200 mA
Additional connections for external devices	PC	1	1
	PROMET/voltage sources	3	3
Housing	Dimensions (W x H x D)		19", 38 U 600 mm x 1840 mm x 900 mm