



CHARGE-DISCHARGE UNITS

- Advanced IGBT technology with extremely low noise design and integrated impedance measurement
- Outstanding security features for fulfillment of performance level „d“
- Programmable control loop architecture to accommodate different test tasks
- Data acquisition with highest accuracy and reproducibility
- Setting time (t90) of less than 0.3 ms for simulating highly dynamic driving cycles
- Powerful automation interfaces, including direct ECU communication and HiL interface

HORIBAFuelCon

TrueData X-HVT



GENERAL FACTS

Power Rating	20 - 200 kW in 20 kW steps 200 - 400 kW in 50 kW steps 400 - 800 kW in 100 kW steps further types on request
Overall efficiency at power rating	$\geq 95\%$
Noise	≤ 70 dB(A) bei 1 m (160 kW, 600 A)

EIS SPECIFICATION

Frequency range	0.1 mHz to 10 kHz (optional up to 50 kHz)
Impedance range	5 $\mu\Omega$ up to 100 Ω
Impedance accuracy	$\pm 1\% \pm 100 \mu\Omega$
Phase angle accuracy	$\pm 1^\circ$
Max. modulation current	10 A _{AC}

DYNAMIC SPECIFICATION

Ripple	$\leq 0.1\%$ eff. FS
Rise time on resistive load (10-90 %):	< 3 ms

The TrueData X-HVT charge-discharge units of HORIBA FuelCon provide excellent accuracy at high system dynamics.

With a single unit voltages up to 1,000 V, currents up to 1,200 A, and outputs up to 600 kW can be covered. Parallel alignment enables higher currents and power.

Fully programmable control circuits (CC, CV, CP) allow optimum adaptation to the inspection needs, including map control.

The modern IGBT technology enables optimized energy recovery. For multi-channel configurations, the energy can be distributed in an intermediate circuit, thus reducing the power input required.

Please feel free to download the latest information available at www.horiba-fuelcon.com. If you have any questions, please do not hesitate to contact us. We will be happy to support you and discuss your testing requirements!

HORIBA FuelCon reserves the right to make changes at any time without notice.

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HORIBAFuelCon

Steinfeldstr. 1
39179 Barleben | Germany

T +49 39203 514 400
F +49 39203 514 409

info@horiba-fuelcon.com
www.horiba-fuelcon.com

ELECTRIC SPECIFICATION

Operating modes	CC, CV, CP, CC _{Mod}
Voltage range	100 V, 600 V, 800 V, 1,000 V, 1,200 V, 1,500 V (optional 4-quadrant operation)
Current range	± 300 A, ± 800 A, $\pm 1,500$ A
Measurement accuracy	$\pm 0.03\%$ MV, $\pm 0.015\%$ FS
Resolution	21 bit
Sampling rate	10 μ s (100 kHz)
Storage rate	3.0 ms

SAFETY

Safety controllers	Emergency stop (two channels) DC-Stop (two channels) DC-On (two channels) Signal of ISO-controller
ISO-controller	Insulation resistance HV-Plus and HV-Minus Analog processing of insulation resistance Safe disconnection of DC contactors
Safety version according to ISO 13849 / EN 60204-1	Galvanically isolated IGBT half bridges

Verification of the functional safety (audit trail) incl. creation of validation certificate ISO 13849

Especially with End-of-Line (EOL) applications and test fields, this property displays as particularly advantageous.

An integrated sequencer (program memory) allows the generation of highly dynamic loading cycles and userspecific tests.

The optional integrated impedance measurement (CCMod) is an indispensable tool for the continuous investigation of electrochemical phenomena and efficient diagnostic strategies.