



GMS-FCS-DC

Fiber-optical current sensor for industrial applications
IEC-61850-3 compliance

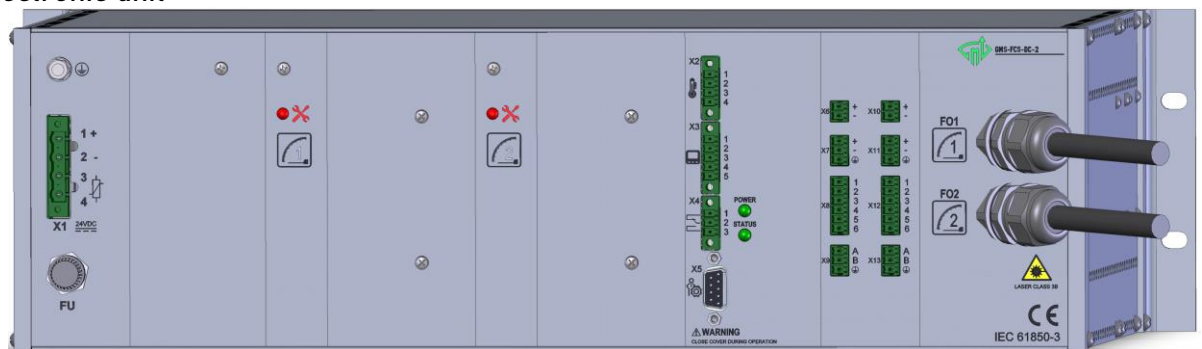
Application:	DC smelters	Superconductivity
	Chemical industry	Fusion reactors
	Hydrogen production	Reference measurements

Technical specifications

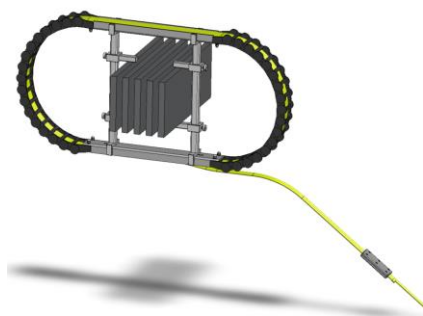
Measuring principle	Fiber optical based on Faraday effect, not affectable to external magnetic fields
Measured current	DC, AC, DC+AC
Rated current	From 10 up to 14 000kA
Precision	±0.1%, ±0.2%, ±0.5%, ±1.0%
Recommended interval between calibrations	6 years for ±0.2%, ±0.5%, ±1.0% accuracy 3 years for ±0.1% accuracy
Digital output	Modbus RTU IEA485
Analog outputs	0..20mA/4..20mA/±0..20mA, configurable source, mode and rated current 0..1V/±0..1V, configurable source, mode and rated current
Logical outputs	Open collector, configurable polarity and switching logic
Sampling rate	Up to 14400 1/sec, configurable
Dimensions	Electronic unit (WxHxD, mm) 482x132x350, Front panel maintenance

	<i>Electronic unit</i>	<i>Sensing element</i>
Environment conditions	IEC 61850-3. T = 0 °C to +45 °C	IEC 61850-3. T = -40 °C to +70 °C
Power supply	24±20% VDC, 1A	N/A. Passive fiber sensor
IP rating	IP20	IP67

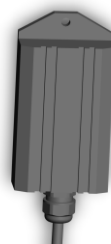
Electronic unit



Sensing element



Temperature sensor



HMI panel display





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Ordering information

Specification code **GMS-FCS-DC-AA-BB1CC1-BB2CC2-DD-EE-FF**

GMS	Green-metering solutions
FSC	Fiber-optical current sensor
DC	For DC applications (no digital IEC 61850-9-2 sampling output)
AA	Quantity of measuring channels 1 One measuring channel 2 Two measuring channels
BB1	Precision in range of 10..100% of selectable rated current for first channel 01 ±0.1% 02 ±0.2% 05 ±0.5% 10 ±1.0%
CC1	Optical sensor limits for rated current range for first channel. Option CR1-CR4 should be specified, combination of options available. SR Standard range from 10 up to 350kA ER Extended range from 100 up to 700kA UR Ultra-high range from 800 up to 14000kA
BB2CC2	Same as BB1 & CC1 for second sensor, use 0000 if AA = 1
DD	Type of analog and logical outputs (Digital ModbusRTU output always installed) 01 1 x (0..20mA/4..20mA/±0..20mA) 1 x (0..1V/±0..1V) 3 x logical 02 2 x (0..20mA/4..20mA/±0..20mA) 2 x (0..1V/±0..1V) 6 x logical
EE	Temperature range for sensors 01 25 °C to +55 °C 02 0 °C to +45 °C 03 -10 °C to +50 °C 04 -20 °C to +60 °C 05 -30 °C to +65 °C 06 -40 °C to +70 °C IR Individual range, declared in specification
FF	Distance between Electronic unit and sensor in meters

Options

HMI	HMI display for panel mounting
PS220DC	DIN-rail power supply for electronic unit from 220VDC power source
PS230AC	DIN-rail power supply for electronic unit from 230VAC power source
CR1	Current range for sensor: from 0 to 25% of basic optical sensor limits range
CR2	Current range for sensor: from 25 to 50% of basic optical sensor limits range
CR3	Current range for sensor: from 50 to 75% of basic optical sensor limits range
CR4	Current range for sensor: from 75 to 100% of basic optical sensor limits range