

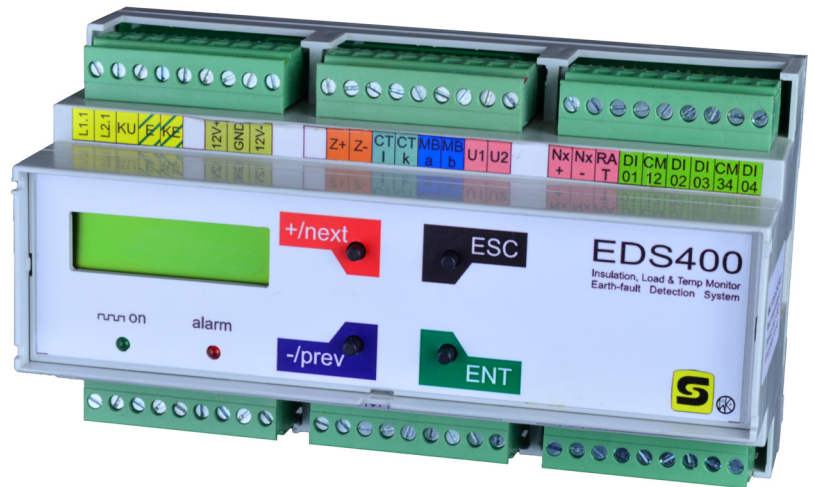
## Earth Fault Detection System – EDS400

### Overview

The medical Earth Fault Detection System EDS400 is specially designed for monitoring and locating earth faults in isolated powers systems, according to IEC61557-8, IEC61557-9, IEC60364-7-710, MEIGaN 2.0 and HTM06-01.

The system includes an Insulation-Monitor, the Earth Fault Detection System (EDS), the capability to view power-network values and status-values of the connected isolated power-network and communicate the information using digital data communication techniques.

The main advantage of the EDS is that the exact location of the earth fault is detected and communicated thus enabling rapid, safe and effective earth fault correction.



### Features

The system incorporates the following features:

- Insulation Monitoring – Continually monitors the insulation resistance of the connected network and alarms when the measured insulation value drops below the set point value.
- Earth-Fault Detection System (EDS) – Identifies the location of a detected earth fault, thus permitting fault detection and identification without having to isolate parts of the network in event of an earth fault.
- Transformer Load Monitoring – The measured load is continuously compared with an editable alarm set point and if the threshold is exceeded an over-current alarm is activated.
- Transformer Temperature Monitoring – Transformer temperature is continuously monitored by a thermal sensor which rise an over temperature alarm if excess temperature is detected or if a broken control cable occurs.
- Digital Inputs – Each input is configurable as normally open or normally closed thus enabling a wide range of third party equipment to be connected.
- Web server (over TCP/IP) – When connected to a computer, the status of the unit can be communicated to a connected computer.
- Email Alarm Notification.
- Using SMTP functionality, the controller can transmit predefined e-mails containing status information and time stamp. The content of the e-mail ca be configured as required to include sender address, recipient address and types of alarm.
- Volt Free Outputs.

## Product Specification

General		Remote Alarm Output	
Nominal ac isolation voltage	AC500V	Transfer Mode	special mode for RA001
Contact circuits	AC250V	Wiring	
Insulation group to DIN VDE 0110 (01.89)	dirty group 3	Type of cable	screened, twisted pair
AC Test Voltage		Max length	1000m
Electronic - relay contacts	AC3000V	Search Current Generation	
Operation class	continuous	Measurement current	
Supply voltage UsAC	230V	load-independent dc current	≤1mA
Relay contacts	one volt free changeover	direction	pulsing +/-
Switching capacity	1100VA	Impedance between line and earth	
Nominal contact voltage	250V	during search (minimum)	50kΩ
Continuous current	5A	maximal	>250kΩ
Breaking capacity at AC220V , cos.phi=0,4	3A	during pause	>10MΩ
Mechanical		Measurement Circuits	
Ambient temperature		Max count of measurement circuits	16
Operation	-10°C .. +60°C	CT connection control	yes
Storage	-40°C .. +80°C	tripping current	DC 0,4mA
Humidity classification to DIN 40 040	F	measurement time (all circuits)	<120s
Ingress protection to DIN 40 050	IP30	Length CT connection wire	
Terminals to VBG4	IP20	twisted pair	< 1m
Mounting		screened, twisted pair	> 1 - 10m
Direction	equal	capacity	≥0,5mm <sup>2</sup>
Rail Mounting	DIN EN 60 715	Digital Inputs	
Terminals		Channels	4
Type	plugable screw terminals	configurable	NO/NC
wire capacity	0,5 .. 2,5mm <sup>2</sup>	Digital Communication	
Weight	~500g	RS485 with ModBus RTU Protocol	
Dimensions	22,5mm x 115mm x 110mm	Driver output	RS485, 2 wire
Requirements on IT-Network		Data-bits	8
Nominal voltage	AC 230V (50/60Hz)	Stop-bits	2
max line capacitance to earth	0,5µF/Phase	Parity	no
max load current through CT	100A	Protocol	ModBus-RTU
max differential current through CT	70mA	operation-mode	Slave
		Address-Range	0..31
Insulation Monitor		Web Server	
Rated voltage for measuring circuit	AC250V	Physical Connection	10BaseT Ethernet
Measuring voltage	DC15V	Protocol	TCP/IP
Measuring current	max.65µA DC		
internal resistance (Terminal L1,L2 to PE)	240kΩ		
Response value			
Adjustable	50kΩ .. 500kΩ		
Hysteresis	ca.20%		
Transformer Load-Monitor			
Transformer ratio	1:1000		
Load	~30Ω		
Adjustable response	5A .. 50A		
Hysteresis	ca.20%		
Temperature Monitor			
Trip resistance Rδ (Terminals Z1/Z2)	>3,5kΩ		



[www.starkstrom.com](http://www.starkstrom.com)

256 Field End Road, Eastcote, Ruislip, Middlesex, HA4 9UW, UK  
Tel +44 (0) 20 8868 3732 Fax +44 (0) 20 8868 3736

