



**GENERATOR PROTECTION**

**FEEDER PROTECTION**

**VOLTAGE & FREQUENCY PROTECTION**

TRANSFORMER



SIL-G

SIL-C

SIL-S

SIU-C

TRANSFORMATION SUBSTATION

TRANSMISSION LINE

**TEST SYSTEM**

**FEEDER & GENERATOR PROTECTION**

**RECLOSER CONTROL**



FTS

SIL-G

SIL-C

SIL-S

SIR-A

SIR-A

SIR-C

DISTRIBUTION LINE

**Secondary Distribution**

**RECLOSER CONTROL & FEEDER PROTECTION**

**FEEDER PROTECTION**

**FEEDER & GENERATOR PROTECTION**



SIR-C

SIL-A

SIL-C

SIL-S

**Self Powered Range**

**RMU's PROTECTION / MRMU's PROTECTION**



**KEMA Labs**



SIA-B Specific CTs

SIA-B Standard CTs



SIA-C



CTs

**SF6 & METALCLAD SWITCHGEAR PROTECTION**



SIA-F

	SIR-A	SIR-C
Type	Feeder Protection and Recloser Control	Feeder Protection and Recloser Control
Auxiliary Supply	Depending on the model: 24-48 Vdc ( $\pm 20\%$ ) 48-230 Vac/Vdc (48-220 Vdc ( $\pm 20\%$ ) / 100-230 Vac ( $\pm 15\%$ )). 24-230 Vdc/ac 24-220 Vdc ( $\pm 20\%$ ) / 100-230 Vac ( $\pm 15\%$ )).	24-230 Vac/dc (24-220 Vdc ( $\pm 20\%$ ) / 100-230 Vac ( $\pm 15\%$ )).
Consumption	24-48 Vdc and 48-230 Vac/dc < 10VA. 24-230 Vac/dc < 20VA.	24-230Vac/dc < 20VA
Current measurement	3/4 standard CT	3/4 standard CT
LPCT	n/a	n/a
Voltage measurement	Voltage sensors	Voltage sensors
VT connection type	n/a	n/a
Load data profiling (LDP)	2160 records	2160 records
50	2	2
SOFT	1	1
50G	1	1
50N	1	1
67/51	4	4
67G/51G	2	2
67N/51N	2	2
67GI	1	1
67NI	1	1
64REF	1	1
46	1	1
46BC	1	1
49	1	1
49T	1	1
37	1	1
AFD	1 (4 AFD inputs + 4 high-speed outputs) (Optional)	
27	2	2
27V1	1	1
27V1-L	1 (Optional)	1 (Optional)
27-L	1 (Optional)	1 (Optional)
59	2	2

	SIR-A	SIR-C
59N	2	2
59N-L	1 (Optional)	1 (Optional)
59-L	1 (Optional)	1 (Optional)
47	1	1
47-L	1 (Optional)	1 (Optional)
32	4	4
81U/O	6	6
81R	2	2
78	1	1
79	√ Up to 4 attempts.	√ Up to 4 attempts.
HLT	1	1
25	1 (Optional)	1 (Optional)
74TCS	1	1
60CTS	1	1
60VTS	1	1
50BF	1	1
SHB	1	1
CLP	1	1
52	√	√
86	√	√
SCM	√	√
SZM	√	√
IRIG-B	Optional	Optional
WIFI	Optional	Optional
Counters	√	√
Commands	√	√
Sett. Group	6	6
Inputs	8 / 16 / 24 / 8 + 4 AFD	8 / 11
Outputs	7 / 11 / 18 / 7 + 4 HS-O	7 / 5
LEDs	11 configurable	11 configurable
HMI	20x4 LCD + 13 keys	20x4 LCD + 13 keys
Event	3072	3072

SIR-A		SIR-C
Fault Report	configurable up to 100	configurable up to 100
Oscillography	configurable up to 100	configurable up to 100
Local Port (frontal)	Micro USB	Micro USB
Remote Port (rear)	RS485 or Ethernet	RS485 or Ethernet
Communications Protocols	RS485 (Modbus RTU, IEC60870-5-103 or DNP 3.0 Serial). RS485 (Modbus RTU, IEC60870-5-103 or DNP 3.0 Serial) + RJ45 (Modbus TCP, DNP 3.0 TCP or IEC60870-5-104) + Web Server + SNTP Protocol + IRIG-B. RJ45 (IEC 61850) + RJ45 (Modbus TCP, DNP 3.0 TCP or IEC60870-5-104) + Web Server + SNTP Protocol + IRIG-B. WiFi + RS485 (Modbus RTU, IEC60870-5-103 or DNP 3.0 Serial) + RJ45 (Modbus TCP, DNP 3.0 TCP or IEC60870-5-104) + Web Server + SNTP Protocol + IRIG-B. WiFi + RJ45 (IEC 61850) + RJ45 (Modbus TCP, DNP 3.0 TCP or IEC60870-5-104) + Web Server + SNTP Protocol + IRIG-B.	RS485 (Modbus RTU, IEC60870-5-103 or DNP 3.0 Serial). RS485 (Modbus RTU, IEC60870-5-103 or DNP 3.0 Serial) + RJ45 (Modbus TCP, DNP 3.0 TCP or IEC60870-5-104) + Web Server + SNTP Protocol + IRIG-B.
Dimensions	198x187x153.15 (mm)	Vertical assembly HxWxD: 198x107x145.01 (mm) Horizontal assembly HxWxD: 107x198x145.01 (mm)