



TAKE A CLOSER LOOK AT SICES GEN-SET CONTROLLERS

Discover our product range and find your ideal solution

A large offshore oil rig is shown at sunset, with the sun low on the horizon over the ocean. The rig's complex structure of yellow and white metal, pipes, and cranes is silhouetted against the colorful sky. The water in the foreground is dark with some light reflecting off the surface.

WHY SICES

Since 1977, **SICES** have designed and manufactured gen-set controllers and power solutions for all types and makes of gen-sets, from their headquarters in Italy.

In the early 80's we were among the first pioneers to develop Synchronising and paralleling controllers incorporating microprocessors, and now **SICES** is one of the best-known names for gen-set controls and power management systems.

Today, our global market demands quality and reliability – more than 40 years of experience and innovative development justifies the **automatic 5-year warranty** on our products.

The **SICES** brand offers a range of exceptional and dependable gen-set control solutions and services, suitable for a wide variety of applications.

Whether gen-set controller, monitoring system or power solution then **SICES** will apply expertise and knowledge to meet your requirements.

Our consultants will help you to transform your ideas into reality, our design team will work with you to create innovative and practical solutions, and from conception to activation every step of your project will be executed by one of our skilled engineers, supported by our qualified and experienced team.

SICES also offers aftercare and service contracts strengthening our commitment to you.

Quality products made in Italy. 

OUR LOCATION

SICES operates from Jerago con Orago (Varese) in Italy.

SICES.EU
5 YEAR
WARRANTY

5 YEAR WARRANTY

At SICES, with over 40 years of experience with critical power generation projects, we have learnt a thing or two about quality. We know that the cost of our controller may be irrelevant compared to the cost of failure on site.

With this experience, we ensure all our products have passed stringent Quality Assurance checks during design approval and production. In addition we also subject them to a unique and arduous 48 hour cyclic burn-in test, to weed out possible early life failures, which could otherwise happen in the field.

We design and build the SICES controllers to last, giving many years of worry free service. This is not an empty promise and most SICES controllers come with a 5 year warranty* which guarantees against component failure and manufacturing defects. Quality products made in Italy.

* See separate warranty statement for details.

GEN-SET CONTROLLERS

The **SICES** range of gen-set controllers are suitable for single standby applications.



GC 250

Compact AMF and AutoStart gen-set controller with 3 phase (RMS) mains voltage and 3 phase (RMS) generator voltage and current monitoring. Integrated J1939 Canbus interface to electronic engines.

- Size 140 × 112 × 41 mm (Cut-out 118 × 92 mm)
- 2 Alternative Configurations
- Low power “deep standby” mode

- 4 Digital inputs
- 6 Digital outputs (2 × 10 A, 4 × 500 mA(+))
- 3 Analogue inputs D+ terminal
- AND/OR logic control
- 64 Event history log with 106 record data-log
- USB
- Stage V



GC 315

Capable AMF and Autostart gen-set controller with 3 phase (RMS) mains voltage and 3 phase (RMS) generator voltage and current monitoring. Integrated J1939 Canbus interface to electronic engines. Extensive input and output capability with optional communication interfaces (Plus and Link 5G versions), make this an extremely powerful single gen-set controller. A version with built in GPRS/GPS tracking (GC 315 Link 5G) is particularly suited for mobile or rental applications, where asset tracking and monitoring is required. GC 315 Link 5G has built in global 5G modem with global 2G fall back capability, which also embeds the GNSS localisation system (GPS/GLONASS/BD) to provide a high-availability solution that offers industry-leading accuracy and performance.

- Size 244 × 178 × 40 mm (Cut-out 218 × 159 mm)
- 4 Alternative configurations
- Expandable I/O including 4 Analogue outputs

- 8 Digital inputs emergency stop input (expandable +32)
- 8 Digital outputs (2 × 3 A, 2 × 10 A c/o, 4 × 500 mA(+)) (expandable +32)
- 3 Analogue inputs D+ terminal and MPU (expandable +4 and +6 thermocouples)
- AND/OR logic control
- 126 Event history log with 106 record data-log
- USB
- 16/4 Calendars/timers
- RS232
- RS485
- Ethernet connection (plus version)
- GPRS/GPS (link version)
- Stage V
- 5G ready Global standard LTE-M, NB-IoT, (GC 315 Link 5G only)



PARALLEL GEN-SET CONTROLLERS

The **SICES** range of parallel controllers are suitable for use in gen-sets working in parallel mode for both emergency and power production applications.



GC 400

Competitive Parallel controller for applications with either multiple gen-sets (GC 400) running in parallel either islanded or in parallel with a mains supply, or single sets (GC 400 mains) running in parallel with a mains supply. A version with built in GPRS/GPS tracking (GC 400 Link 5G) is particularly suited to mobile and Rental applications where multi-set parallel operation is required. GC 400 Link 5G has a built in global 5G modem with global 2G fall back capability, which also embeds the GNSS localisation system (GPS/GLONASS/BD) to provide a high-availability solution that offers industry-leading accuracy and performance.

- Size 244 × 178 × 40 mm (Cut-out 218 × 159 mm)
- 4 Alternative configurations
- Parallel up to 16 Gen-sets
- BDEW Grid code compliant

- 8 Digital inputs emergency stop input (expandable +32)
- 8 Digital outputs (2 × 3 A, 2 × 10 A c/o, 4 × 500 mA(+)) (expandable +32)
- 3 Analogue inputs D+ terminal and MPU (expandable +4 and +6 thermocouples)
- 2 Analogue outputs +/- 10 V for speed and voltage control (expandable +16)
- AND/OR logic control
- 64 Event history log with 106 record data-log
- USB
- RS232
- RS485
- Ethernet connection
- GPRS/GPS (link version)
- Stage V
- 5G ready Global standard LTE-M, NB-IoT, (GC 400 Link 5G only)



MC 400

The MC 400 controller is used where one or more mains supplies are required to parallel with the GC 400 generator bus.

- Size 244 × 178 × 40 mm (Cut-out 218 × 159 mm)
- 4 Alternative configurations
- Works with GC 400
- Peak shaving / Peak lopping
- Parallel up to 16 mains supplies

- 8 Digital inputs emergency stop input (expandable +32)
- 8 Digital outputs (2 × 3 A, 2 × 10 A c/o, 4 × 500 mA(+)) (expandable +32)
- 3 Analogue inputs D+ terminal and MPU (expandable +4 and +6 thermocouples)
- 2 Analogue outputs +/- 10 V for speed and voltage control (expandable +16)
- AND/OR logic control
- 126 Event history log with 106 record data-log
- USB
- RS232
- RS485
- Ethernet connection



PARALLEL GEN-SET CONTROLLERS



GC 600

The highly capable GC 600 parallel gen-set controller is extremely well featured for parallel applications, it includes a large PLC to ensure customers' onsite application requirements can be fully met. A large full colour display makes these controllers suitable for a wide range of applications while presenting operating status in a clear easy to view format. The GC 600 mains has all the features of the GC 600 with an additional dedicated Mains Breaker control pushbutton.



- 18 Digital inputs emergency stop input (expandable +64)
- 18 Digital outputs (2 x 3 A, 2 x 10 A c/o, 4 x 500 mA[+], 9 x 280 mA[-] hardware watchdog output), (expandable +64)
- 6 Analogue inputs (including 2x differential inputs) and D+ terminal and MPU (expandable +20 and +30 thermocouples)
- 2 Analogue outputs +/-10 V for speed and voltage control (expandable +16)
- AND/OR logic control
- 537 Event history log with 537 record data-log
- USB
- RS232
- RS485
- Ethernet connection
- PLC Logic control (64 Kb PLC memory and 512 bytes RAM)
- PWM output
- 16 Calendars
- Stage V

- Size 244 x 178 x 83 mm (Cut-out 218 x 159 mm)
- 4.3" Colour TFT display
- 4 Alternative configurations
- Expandable I/O
- Load Shedding
- Hardware watchdog
- Smart load management
- Running hours equalisation
- Parallel up to 16 Gen-sets
- BDEW Grid code compliant
- Parallel up to 16 mains supplies using MC 200



MC 200

The MC 200 controller is used where one or more mains supplies are required to parallel with the generator bus, it also features a powerful PLC to ensure site specific design details can be accommodated. A large full colour display presents operating status in a clear easy to view format. A generous input and output capability with the ability to add expansion where needed, means complex sites can be tackled with ease.



- 18 Digital inputs emergency stop input (expandable +64)
- 18 Digital outputs (2 x 3 A, 2 x 10 A c/o, 4 x 500 mA[+], 9 x 280 mA[-] and 1 x 280 mA[-] hardware watchdog output), (expandable +64)
- 6 Analogue inputs (expandable +20 and +30 thermocouples)
- 2 Analogue outputs +/-10 V (expandable +16)
- AND/OR logic control
- 537 Event history log with 537 record data-log
- USB
- RS232
- RS485
- Ethernet connection
- PLC Logic control (64 Kb PLC memory and 512 bytes RAM)
- 16 Calendars

- Size 244 x 178 x 83 mm (Cut-out 218 x 159 mm)
- 4.3" Colour TFT display
- 4 Alternative configurations
- Expandable I/O
- Peak shaving / Peak lopping
- BDEW Grid code compliant
- Hardware watchdog



BTB 200

The BTB 200 controller provides the ability to control a bus tie breaker, for applications where it is necessary to divide the common bus during certain operating conditions. A large full colour display presents operating status in a clear easy to view format. Combined with generous input and output capability that means complex sites can be tackled with ease.



- 18 Digital inputs emergency stop input (expandable +64)
- 18 Digital outputs (2 x 3 A, 2 x 10 A c/o, 4 x 500 mA[+], 9 x 280 mA[-] and 1 x 280 mA[-] hardware watchdog output), (expandable +64)
- 6 Analogue inputs (expandable +20 and +30 thermocouples)
- 2 Analogue outputs +/-10 V (expandable +16)
- AND/OR logic control
- 537 Event history log with 537 record data-log
- USB
- RS232
- RS485
- Ethernet connection
- 16 Calendars

- Size 244 x 178 x 83 mm (Cut-out 218 x 159 mm)
- 4.3" Colour TFT display
- 4 Alternative configurations
- Hardware watchdog

PARALLEL GEN-SET CONTROLLERS



DST4602 EVOLUTION

Highly Advanced Parallel controller with large full colour display. Capability is guaranteed with the large PLC and extensive input and output specification. Complex monitoring of Co-generation (CHP) equipment can be achieved with ease, as can complex multiple parallel applications. The no compromise design has a robust metal case and includes the option of secure key-switch or pushbutton control. Available as either a single box "compact" version or two box "SCM" + "HMI" version, makes the DST4602 Evolution a controller of choice when customer requirements need to be accommodated.



- 20 Digital inputs** (expandable +160)
- 16 Digital outputs** (2 x 4 A, 2 x 10 A c/o, 8 x 350 mA(-), 2 x 1 A, 2 x 2.5 A), (expandable +160)
- 5 Analogue inputs** D+ terminal and MPU (expandable +48)
- 2 Analogue outputs** +/-20 mA or +/-20 V for speed and voltage control (expandable +32)
- AND/OR logic control**
- 860 Event history log** with 860 record data-log
- USB**
- 16/6 Calendars/timers**
- RS232**
- Air Fuel Ratio**
- Ethernet connection**
- PLC Logic control** (128 Kb PLC memory and 1024 bytes RAM)
- RS485**
- Stage V**

- Size 260 x 202 x 86 mm (Cut-out 240 x 172 mm)
- 7" Colour TFT display
- Available as either a single box "compact" version or two box "SCM" + "HMI" version
- Metal casing
- Expandable I/O with dedicated expansion Can-bus
- Remote display option
- Option of Key-switch control or pushbutton control
- D-Pro protection relay Can-bus connection
- Load Shedding
- Load Sharing
- Load Management
- Power Modulation in parallel with Mains
- Droop
- Partial Redundancy
- Close before excitation (CBE)
- Load reserve
- Parallel up to 24 Gen-sets
- BDEW Grid code compliant and certified



DST4602 REMOTE

An additional remote display and control location for DST4602 Evolution controllers. Up to 5 remote locations can be fitted to the DST4602 Evolution controller.



- 1 Digital outputs** (1 A c/o)
- RS485** (1 remote)
- Ethernet connection** (up to 4 remotes)

- Size 260 x 202 x 43 mm (Cut-out 240 x 172 mm)
- 7" Colour TFT display
- Metal casing
- Option of Key-switch control or pushbutton control



D-MONITOR

Full colour touch screen for visualisation of the controller. Particularly suitable for Co-Generation (CHP) plants where it is required to visualise and control both electrical and thermal performance of the system.



- RS485**
- Ethernet connection**

- Connection to the DST4602 Evolution is via either RS485 or Ethernet Modbus TCP/IP connection.
- Available in either 12.1" or 15.6" sizes

GEN-SET CONTROLLERS

ATS CONTROLLERS

The **SICES** ATS controllers are designed for use in applications where the transfer switch is separate from the generator controller.



ATS 115

Automatic transfer switch controller with 3 phase (RMS) mains voltage and 3 phase (RMS) generator voltage and current monitoring. Extensive Input and output capability with optional communication interfaces (plus versions), this ATS controller is suitable for operation with two different power sources.



- Size 244 × 178 × 40 mm (Cut-out 218 × 159 mm)
- 4 Alternative configurations
- Expandable I/O including 4 Analogue outputs

- 8 Digital inputs emergency stop input (expandable +32)
- 8 Digital outputs (2 × 3 A, 2 × 10 A c/o, 4 × 500 mA(+)) (expandable +32)
- 3 Analogue inputs D+ terminal and MPU (expandable +4 and +6 thermocouples)
- AND/OR logic control
- 126 Event history log with 106 record data-log
- USB
- 16/4 Calendars/timers
- RS232
- RS485
- Ethernet connection (plus version)

HYBRID CONTROLLERS

The **SICES** Hybrid controller has been designed to control DC generators typically used in Telecom applications and is able to monitor the load and battery levels, as well as manage the automatic stop/start of the gen-set.



HS 315

Aims to minimise generator run time and optimise both fuel consumption and running hours. HS 315 features whole site voltage and current monitoring with the ability to communicate with smart batteries.



- Size 244 × 178 × 50 mm (Cut-out 218 × 159 mm)
- 8 AC/DC Voltage measuring inputs + 2 DC Voltage inputs
- 4 DC current measurement inputs (SHUNT or optional Hall-effect)
- 1 PT100 Battery temperature input
- 4 Alternative configurations
- 31 Recorded Charge/Discharge cycles
- Smart Battery Modbus communications

- 12 Digital inputs emergency stop input
- 12 Digital outputs (2 × 3 A, 2 × 10 A c/o, 8 × 300 mA(+))
- 3 Analogue inputs D+ terminal and MPU
- 1 Analogue outputs speed (PMG) or voltage (AVR) controlled battery charging
- AND/OR logic control
- 126 Event history log with 106 record data-log

- USB
- 16/4 Calendars/timers
- USB/RS232
- RS485
- Ethernet connection
- GPRS/GPS (Link version)
- PLC Logic control (64 Kb PLC memory and 512 bytes RAM)
- Stage V



RN 200

RN200 is a powerful controller designed for parallel applications including multiple gen-sets operating in parallel with a renewable energy source with or without Mains supply.



- Size 244 (W) × 178 (H) × 83 (D) mm (Cut-out 218 × 159mm)
- Additional analogue inputs
- Allows maximum renewable energy penetration in the system
- CANbus interface
- Real Time Clock
- Measurement of the renewable sources

- 18 + 1 Digital inputs (N.1 for the Emergency stop push button)
- 18 Programmable digital outputs PLC logic control
- 4 Configurable analogue inputs 0...10 V
- 2 Analogue outputs -10/+10 V
- 537 Event history log with 537 record data-log
- PLC Logic control (Configurable logics and full PLC functions)

- USB
- RS485
- Ethernet connection

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GC 315 AND GC 400

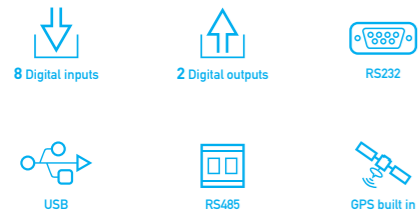
THE WORLD'S FIRST 5G CONNECTED GENERATOR CONTROLLERS



REWIND

GPRS/GSM and GPS interface module for the communication with the monitoring system SIMONE and SICES Supervisor.

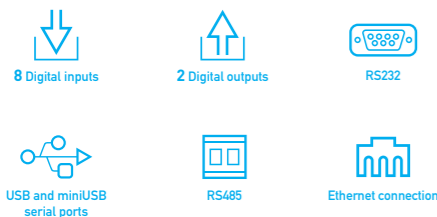
- GPRS/GSM communications
- Canbus Port
- Analogue 0–5 V Fuel level input
- Integral accelerometer and Gyroscope
- Internal battery in the event of removal of external DC supply
- Supports all SICES Generator controllers
- Supports a wide range of third party devices, including most commonly used generator controllers
- Can be used stand alone using conventional inputs and outputs
- Designed for use with SIMONE cloud based monitoring system
- Advanced tracking solution



DANCE

Ethernet Modbus TCP/IP interface device for the communication with the monitoring system SIMONE and SICES Supervisor.

- Built in Webserver



SIMONE

Cloud based monitoring system using Ethernet or GPRS connection from remote equipment. Suitable for monitoring of rental fleets, Co-generation (CHP) installations or other widely distributed plants.

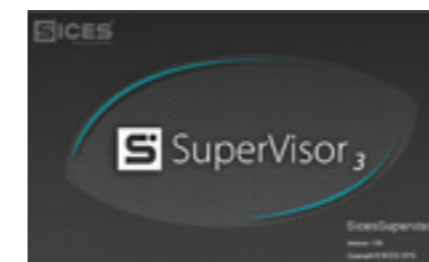
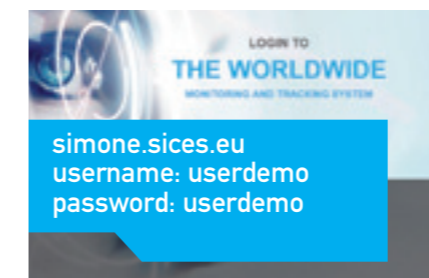
The system features advanced GPS tracking of equipment in addition to remote monitoring and alarm notification.

The SIMONE system is suitable for monitoring Generating sets, fuel tanks and other plant. It interfaces with SICES Controllers and many other commonly used gen-set controllers.

Users can choose to use either the common SICES hosted server or host their own.

List of Supported Controllers in SIMONE and REWIND2

- SICES DST 4400, DST 4601/PX, DST 2600, GC 310, GC 350, GC 500, DST4602
- SICES ATS 115, GC 315, GC 400, GC 600, DST4602 Evolution
- DSE 5210, 7320, 7510, 5510
- IME NemoD4
- ComAp IL-NT AMF25, IG-NTC BB
- Elcos CAM-120
- Cummins PCC 2.xx 3.xx, MCM3320
- Powernet M200
- Deif AGC3
- Woodward EasyGen 3200
- Caterpillar EMCP3, EMCP4
- Lovato RGK800



SICES SUPERVISOR 3

System monitoring and SCADA PC software. Allows monitoring of the power generation plant either locally or remotely. The fully configurable software allows the user to view the plant single line diagram, control the operation of breakers and generating sets. Alarm monitoring, diagnostics and trends can be reviewed to streamline operations and aid fault finding.



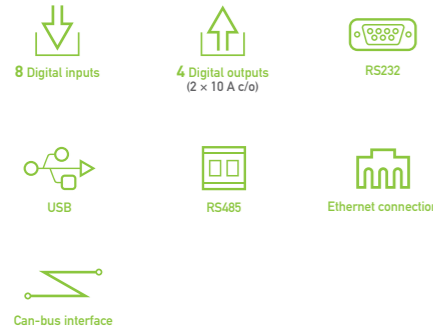
PROTECTION EXPANSIONS



D-PRO

Multifunction protection relay used to provide additional protection to installation in more demanded applications such as Medium or High voltage or Oil & GAS installations. D-Pro features a Can-bus connection to integrate it into a DST4602 Evolution based control system, or alternatively it can be used stand-alone connecting to the control system via its Relays and Inputs.

- Size 266 × 177 × 41 mm



Protection code	Description
27	Minimum generator's voltage
27T	Minimum generator's time-dependent
32P	Maximum active power
32Q	Maximum reactive power
46	Negative sequence
47	Wrong phases sequence
50	Short circuit
50N	Neutral short circuit
50V	Short circuit with voltage-restrained
51	Maximum current
51N	Maximum neutral current
51V	Maximum current with voltage-restrained
59	Maximum generator's voltage
59N-59V0	Maximum residual voltage (homopolar voltage)
810	Maximum generator's frequency
81U	Minimum generator's frequency
87G	Genset earthing differential protection
32RP	Active power reverse
32RQ/40	Reactive power reverse / Loss of excitation
64	Restricted earth fault / Maximum differential current

- 3 Phase Voltage input
- 1 Residual Voltage input
- 6 Current Inputs
- 1 Auxiliary Current Input
- 1 Auxiliary Toroid Current Input
- Can-bus connection to DST4602 Evolution
- 8 digital inputs
- 4 digital outputs 10A



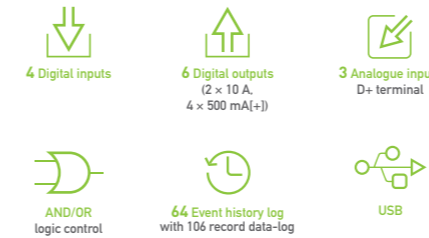
MP 250

The MP 250 mains protection relay is a device specifically for detection of "Loss of mains" when operating in parallel with the grid.

The relay will monitor the mains parameters and should it detect an out of limits value, it will issue a trip command to cease parallel operation with the mains supply.

The MP 250 features multistage protections for under and over voltage, under and over frequency as well as rate of change of frequency (ROCOF), and vector shift. All alarms are configurable to provide fault ride through capability to prevent nuisance tripping. The unit allows full compliance with relevant grid codes such as BDEW including G59/3 and G99.

- Size 140 × 112 × 41 mm (Cut-out 118 × 92 mm)
- 2 Alternative Configurations



Protection code	Description
27	Minimum voltage, 5 stages
27 (V+)	Minimum positive sequence voltage, 1 stage
59	Maximum voltage, 5 stages
59 (59_AVG)	Maximum average voltage, 1 stage
59 (V0)	Maximum zero sequence voltage, 1 stage
59Q (V-)	Maximum negative sequence voltage, 1 stage
60 (V_UNB)	Voltage unbalance, 1 stage
47 (SEQ)	Wrong phases sequence, 1 stage
81U	Minimum frequency, 2 stages
810	Maximum frequency, 2 stages
81R	Rate of change of frequency, 3 stages
78 (VS)	Vector shift

I/O EXPANSION MODULES



DITEL

16 × Input and 8 × Output (1 A C/O) expansion module for use with supported SICES controllers.

DITHERM

3 × Thermocouple expansion module for use with supported SICES controllers.

DIVIT

4 × Analogue Voltage and current module for use with supported SICES controllers measures signals 0–5 V, 0–10 V and 0–10 mA, 0–20 mA.

DIGRIN

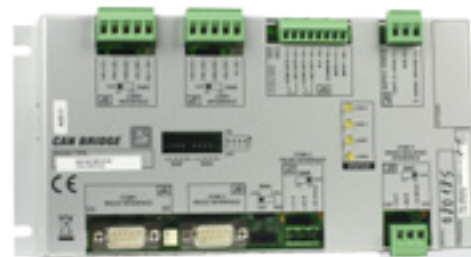
3 × PT100 expansion module for use with supported SICES controllers.

DANOUT

4 × analogue output module with ModBus RTU/CanBus protocol connection, use with SICES controllers or stand alone.



OTHER ACCESSORIES



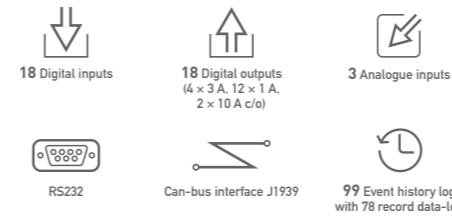
CANBRIDGE

The **CANBRIDGE** allows load sharing between gen-sets over long distances, or as CanBus isolator to increase the number of CanBus connected devices in a system. It also can be used to design a redundant system to guarantee back-up line for load sharing. The Ethernet version of **CANBRIDGE** also enables monitoring of mains levels via IEC 60870-5-104 connection.



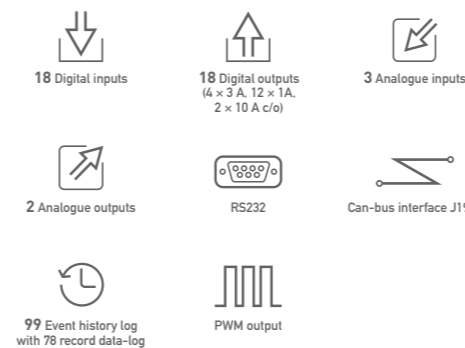
GC 350-R

- An advanced marine certified gen-set controller with extensive configurability suitable for use in stand-by gen-sets
- Size 244 × 178 × 85 mm (Cut-out 218 × 159 mm)
- Ground fault protection (51N)
- Additional RS232 or RS485 serial port
- Expandable I/O
- RINA Marine certification



GC 500-R

- Marine Certified gen-set controller for parallel marine applications
- Size 244 × 178 × 85 mm (Cut-out 218 × 159 mm)
- Ground fault protection (51N)
- Additional RS232 or RS485 serial port
- Expandable I/O
- RINA Marine certification





ELGIN FRANKLIN OFFSHORE FIELD – UK, NORTH SEA

“The world’s largest high-pressure/high-temperature gas condensate reservoir development.”
Location: UK, North Sea

SICES designed and manufactured two off customized control panels for both emergency gen-set control and Fire and Gas protection – One for each platform. Each control panel is equipped with an DST4602 Evolution advanced multiple paralleling gen-set controller, 4 battery chargers and several expansion modules.



SEYCHELLES INTERNATIONAL AIRPORT

“More than 370,000 passengers are visiting the paradise islands of Seychelles per year, let’s keep them flying.”
Location: Island of Mahé

SICES entered a project to upgrade the controls on 3 × 315 kVA standby gen-sets to operate in conjunction with the additional 2 × 810 kVA standby sets. A total of 3 × DST4602 Evolution were used for the generator control with 3 × DST4602 Remote displays and 15” D monitor touch screen in the remote monitoring location. 2 × ATS 115 controllers controlled the changeover switches in the event of mains failure.



ISTANBUL METRO

“The deepest underwater subway, under the world’s busiest shipping lanes.”
Location: Istanbul, Turkey

This complex civil engineering project requires construction of a tunnel under one of the worlds business shipping channels, joining two continents and be able to withstand a severe earthquake up to 9 on the Richter scale. SICES designed, manufactured and commissioned 4 separate sites for the project, 2 sites with 3 × 1730 kVA MV diesel sets in parallel and 2 sites with 5 × 2,000 kVA MV diesel sets in parallel using DST4601/px controllers.



MOSE PROJECT

“That’s because MOSE is currently the most massive public works project in the entire world.”
Location: Italy, Venice

An Innovative system of 78 pneumatically operated gates installed at the 3 inlets connecting the Venice Lagoon and the Adriatic Sea and able to temporarily isolate the Venetian Lagoon from the Sea during high tides. SICES designed, manufactured and tested a customized control system using SICES DST4602 and D-monitor for the twelve gen-sets used to power the massive compressors needed to raise the gates.

CONTACT US

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