

SPECIALIST SYSTEM ENGINEERING

✉ P.O.Box 7170
Centurion
0046



☎ +27 12 663 4331/2/3/4
☎ +27 12 663 4335

31 Kersieboom Crescent
Zwartkop Ext 4
0157

Website: www.sse.co.za

VAT No: 4640145746

Reg No: 1994/030350/23

Introduction

The SSE-RTU11 is one of the series of advanced Remote Terminal Units (RTU's) for the remote monitoring and control of equipment over long distances. The SSE series of RTU's can connect seamlessly through the SSE-OPC Server, to almost any of the popular SCADA systems. The SSE-RTU11 can be expanded to accommodate additional I/O modules.

Communication Mediums

The SSE-RTU11 can use a number of communication mediums to communicate data from point to point or through to SCADA systems. The SSE-RTU11 can make use of the following communication mediums:

- Analogue Radio
- Data Radios
- Landline Dial-up Modem
- Cell Dial-Up Modem
- Cell SMS
- Cell GPRS
- Cell HSCSD
- RS232/485
- Fiber Optic
- Ethernet.

Features

The SSE-RTU11 has the following features:

- Powerful-modular software design.
- A real-time I/O device.
- Intelligent Data Logger.
- Remote time stamping of event and logged data.
- Totally configurable and programmable from the SSE-OPC Configuration Toolbox.
- Modular and easily expandable.
- Excellent EMI Protection.
- Programmable with powerful "PLC" type instruction set.
- Industrial standard high speed 16 bit processor.
- On-Board 512K-Word Flash and 512K-Word non volatile RAM.
- On-Board FFSK Radio Modem for analogue radios.
- On-Board Real-time clock and watch-dog timer.
- On-Board LED's indicating the Digital Input and Digital Output Status.
- Through a Communication Orchestrator, the SSE-RTU11 can extract data for PLC's, Intelligent Flow meters, controllers, etc.
- Build to ISO 9000 Standards.
- 24 I/O's on the main processor board of the SSE-RTU11, 8 DIN, 8 AIN, 8 DOT.
- Additional I/O modules can be added through the parallel expansion bus.

Connects to a wide range of interface modules:

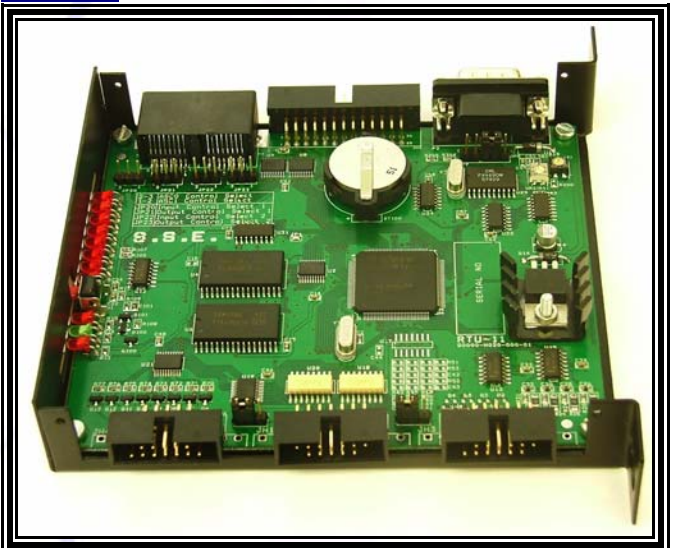
- 2, 4 and 8 channel I/O lightning protection units.

- 3, 4 and 8 channel galvanic isolation units for AIN's.
- 2, 4 and 8 channel 10 Amp interposing relay modules.

SSE-RTU11 with Expansion Modules



SSE-RTU11



SSE-RTU11 CPU

On-Board IO Specifications:

Analogue Inputs (AIN):

- 8 Inputs
- 12 Bit Resolution
- 0.1 % Accuracy
- Single ended
- Additional AIN on expansion modules

Digital Inputs (DIN):

- 8 Inputs, with LED status display
- Opto-Isolated
- 5 kV isolation
- Additional DIN on expansion modules



QUALITY
MANAGEMENT
Certificate

Voluntary participation in regular
monitoring according to ISO9001:2000



Digital Outputs (DOT):

- 8 Outputs, with LED status display
- Open Collector
- 250mA sinking per channel
- Additional DOT on expansion modules

Input Output (I/O) Expansion Capabilities

Over and above on-board I/O's the main SSE-RTU11 CPU module, has additional I/O expansion modules that can be added to extend the range of the discrete I/O's per SSE-RTU11. The typical I/O modules that can be added are:

- Multi I/O Module (8 DIN, 8 AIN, 8 DOT)
- 24 Channel Digital Input Module.
- 24 Channel Digital Output Module.
- 8 Channel Analogue Output Module.

Other Specifications

- Voltage: 9 to 17 Volts DC
- Power Consumption: < 120mA
- 2 x RS232 ports (300 to 57600 bps) RJ45(EIA-561 Compatible)
- One FFSK Analogue Radio Modem Port
- PTT, DCD and Test LED's

Software Functionality

The SSE-RTU11 is packed with powerful features and functions such as:

- Digipeating. (Store and forward)
- All individual I/O are configurable by alarm rising, falling, delta change (Analogue) or state change (Digital)
- Programmable as a PLC
- I/O Mapping
- Intelligent Data Logger
- Report by change of state
- Communication Orchestrator

Digipeating (Digital Repeating) – (Store & Forward)

Digipeating is a method by which a message can be stored and then forwarded to a destination station through other SSE-RTU11 remote stations. Three intermediate SSE-RTU11 Stations can be used to digipeat (repeat) the message to reach the destination station. Thus, any SSE-RTU equipped remote station can be used to reach stations at far end points. It eliminates the use of expensive repeaters.

Configurable

The SSE-RTU11 is totally configurable by using the Configuration Toolbox of the SSE-OPC Server. The SSE-OPC Server can be used to configure and program hundreds of settings and options available in the SSE-RTU11.

Fault Finding

The SSE-OPC Server can also be used to configure the SSE-RTU11, and has powerful features by which detailed and comprehensive fault finding tests can be executed on the SSE-RTU11.

PLC Programmability

The SSE-RTU11 can also be programmed to be used to execute control and other PLC decision making tasks. Although it does not have the quick cycle times of a PLC, complex tasks can still be executed. The PLC instruction set programming can be done inside the SSE-OPC Server programming and configuration Toolbox and can then be remotely downloaded via any of the selected communication medium.

Not only local control can be done, but also remote control. Any SSE-RTU11 can control any other SSE-RTU11 through a selected communication medium.

Intelligent Data Logging

A very powerful logger is part of the SSE-RTU11 functionality. The logger can log data under the following conditions:

- Log user selectable digital inputs on change of state, either high going or low going edges.
- Log user selectable analogue inputs on user definable change of value. The analogue input can be averaged over a user definable time period and the average can then be logged.
- Log user selectable digital inputs and/or analogue input on user selectable regular time intervals such as every 5 Sec, or 5 Minutes, etc.

I/O Mapping

Any SSE-RTU11 can request data from any other SSE-RTU11, and/or report any data to any other SSE-RTU11 on the communication network. By using I/O Mapping, the transmitted data or received data can be mapped or routed to the received SSE-RTU11 internal data structure to be used for control and decision making purposes.

Data Reporting

Data can be reported to any number of other SSE-RTU11's or SCADA's on the communication network. The reporting can happen either on change of state for digital or change of value for analogue inputs. Data will also be transmitted when requested by the base station where the SSE-OPC Server resides.

Any analogue or digital input can be configured as event driven inputs. All parameters to make the inputs are user configurable from the SSE-OPC configuration toolbox.

All change of state events are time stamped at the SSE-RTU11. The new value with the time stamp will then be transmitted to the destination for processing.

Communication Orchestrator (Multiple Protocols)

The SSE-RTU has a unique functionality by which it can be configured to extract data from a number of other intelligent devices such as PLC's, flow meters, controllers, power meters, etc. The following protocols are supported:

Modbus RTU Master	teleRANGER*
Modbus RTU Slave	ABB Magmaster
IEC 60870-5-101 (Slave)	HART@
DNP 3 (Slave - Level 3)	IRC Protocol*
Hectronic	Tag Reader*
GPU	LOOK@*
Emermax	
(* Propriety Protocols)	

SMS Reporting

Over and above the reporting of Change of State values to other RTU's or SCADA system, the SSE-RTU11 can also be configured to send text messages to Mobile Cell Phone users to report alarms. The text describing the alarm condition received on the Mobile phone, is completely configurable by the end user or client.

SSE-OPC Server

SSE has a comprehensive and powerful OPC Server which makes the SSE-RTU equipment a truly open system. Any SCADA or other third party software with OPC Client drivers can interface with the SSE Telemetry equipment via the SSE OPC Server.

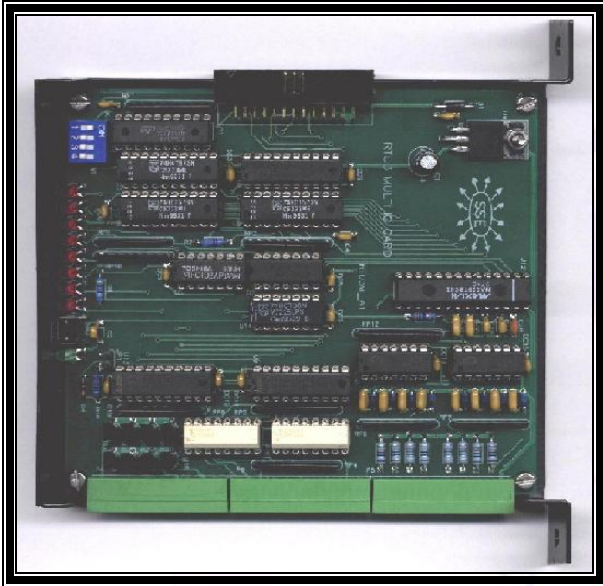
Ordering Information

- SSE-RTU11 with 14-Way pluggable ribbon connectors
 - : SSE-RTU11/14
- SSE-RTU11 with 10-Way pluggable screw terminal connectors : SSE-RTU11/10



Multi I/O Expansion Module

This module is used to connect additional discrete Inputs and Outputs to the SSE-RTU11. This Unit duplicates the IO configuration found on the SSE-RTU11. The unit is connected to the SSE-RTU11 and powered via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc.
- Typical : 13,8Vdc.
- Maximum : 15Vdc.

Physical Dimension

- Length : 131mm.
- Width : 27mm.
- Height : 114mm.

Supply Current

- Analog Input : 4 – 20mA, or Voltage inputs.
- Digital Input : Opto - Isolated 2, 5 KV RMS.
- Digital Output : Open Drain 250mA – 600mA sinking.

Digital Input (DIN):

- 8 Channel Opto-Isolated 2, 5KV RMS Isolation.

Digital Output (DOT):

- 8 Channels : 8 Channel Open Drain 250mA – 600mA sinking

Analog Input (AIN):

- 8 Channel Single Ended – 12 Bit Resolution.

Connection Sockets

- Expansion Bus and Unit Power: 26-Way Ribbon.
- I/O's: Either through three pluggable 14-Way ribbon connectors to BB IO protection modules, or through three pluggable 10-Way screw terminal connectors.

Ordering Information

- Module with 14-Way pluggable ribbon connectors : **SSE-MIO/111/14**
- Module with 10-Way pluggable screw terminal connectors : **SSE-MIO/111/10**

24 Channel Digital Input Module

This module is used to connect additional discrete Digital Inputs to the SSE-RTU11. The unit is connected to the RTU via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum - 9Vdc.
- Typical - 13,8Vdc.
- Maximum - 15Vdc.

Physical Dimension

- Length - 131mm.
- Width - 27mm.
- Height - 114mm.

Digital Inputs (DIN):

- 24 Channel Opto-Isolated 2, 5 KV RMS Isolation.

Connection Sockets

- Expansion Bus and Unit Power: 26-Way Ribbon.
- I/O's: Either through three pluggable 14-Way ribbon connectors to BB IO protection modules, or through three pluggable 10-Way screw terminal connectors.

Ordering Information

- Module with 14-Way pluggable ribbon connectors : **SSE-DIN24/14**
- Module with 10-Way pluggable screw terminal connectors : **SSE-DIN24/10**



QUALITY MANAGEMENT
Certificate

Voluntary participation in regular monitoring according to ISO 9001:2000



24 Channel Digital Output Module

This module is used to connect additional open drain discrete Digital Outputs to the SSE-RTU11. The outputs can driver interposing relays for high voltage/ high current switching.

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

Digital Outputs DOT:

- 8 Channel Open Drain 250mA – 600mA sinking

Connection Sockets

- Expansion Bus and Unit Power: 26-Way Ribbon.
- I/O's : Either through three 14-Way pluggable ribbon connector to BB IO protection modules, or through three 10-Way pluggable screw terminal connectors

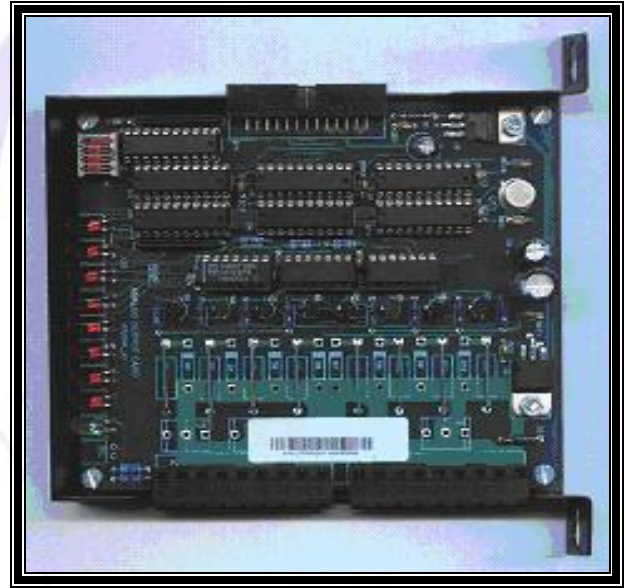
Ordering Information

- Module with 14-Way pluggable ribbon connectors : **SSE-DOT24/14**
- Module with 10-Way pluggable screw terminal connectors : **SSE-DOT24/10**

8 Channel Analog Output Module

This module is used to connect additional discrete Analogue Outputs to the SSE-RTU11. Please note that this Analogue output is a 0-20mA sinking unit.

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

Analog Outputs AOT:

- Current Sinking Device
- 4-20mA
- Forms 4-20mA Output when connected to a Loop Powering Isolator

Connection Sockets

- Expansion Bus and Unit Power: 26-Way Ribbon.
- I/O's : Two 9-Way pluggable screw terminal connectors

Ordering Information

- 4 Channel : **SSE-4CHOUT/AN**
- 8 Channel : **SSE-8CHOUT/AN**



QUALITY MANAGEMENT
Certificate

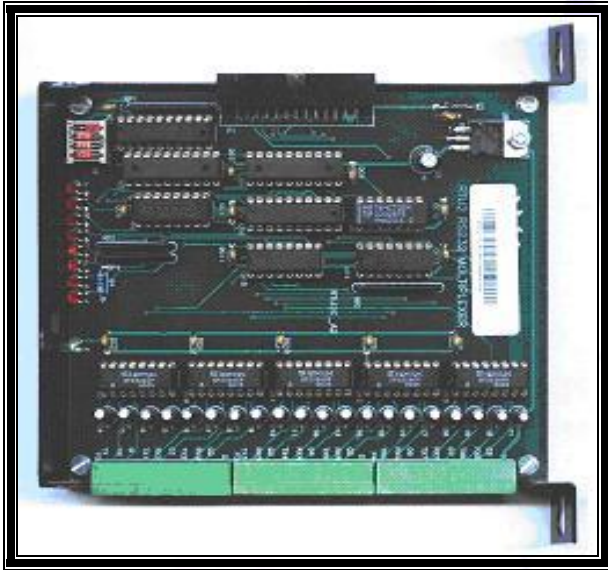
Voluntary participation in regular monitoring according to ISO 9001:2000



8 Channel RS232 Multiplexer

This module is used to connect additional discrete RS232 serial communication ports to the SSE-RTU11. One of the RS232 ports of the RTU gets wired to this module, which will multiplex the RS232 communication. This module can only be used where the RTU communicates as master to other Intelligent Electronic Devices (IED's).

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

EIA 232 (x8)

- Serial Communication Ports (300 to 57600 bps)
- Programmable to Switch Ports
- 9 Pin Female Rx, Tx, Ground (Non-Standard Connection)

Connection Sockets

- Expansion Bus and Unit Power: 26-Way Ribbon.
- RS232 ports: Three 10-Way pluggable screw terminal connectors

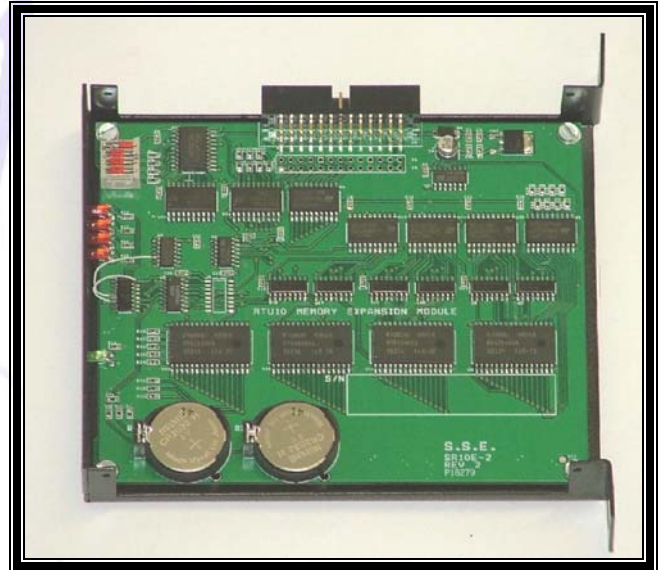
Ordering Information

- SSE-RS232MX

Memory Expansion Module

This module is used in cases where the memory on the SSE-RTU11 is not adequate for data logging purposes. Thus this is a data storage memory module.

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

Memory

- 2MB x 8
- Non-volatile Failsafe battery backup

Expandable to maximum of 6 memory modules per SSE RTU11 (12MB x 8)

Connection Sockets

- Expansion bus and unit power: 26-Way Ribbon

Ordering Information

- SSE-SR10E-2



QUALITY MANAGEMENT
Certificate

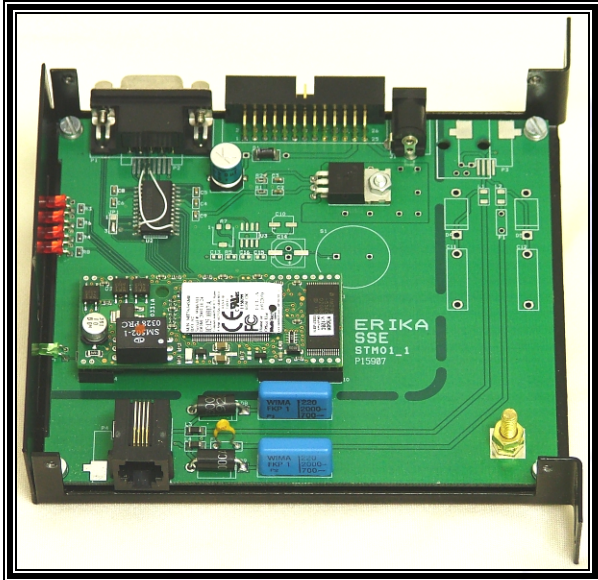
Voluntary participation in regular monitoring according to ISO 9001:2000



Erica Module (Landline Modem)

Erica is a Landline Modem used for data communication with the SSE-RTU11 via landline telephone networks.

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

Typical Baud Rate

- Rate : 9 600 - 56 000Bps

Connection Sockets

- Expansion bus and Unit Power: 26-Way Ribbon
- 9 Pin D-Type for RS232 communication.
- Land-Line: RJ 45
- Optional power plug: Phone jack.

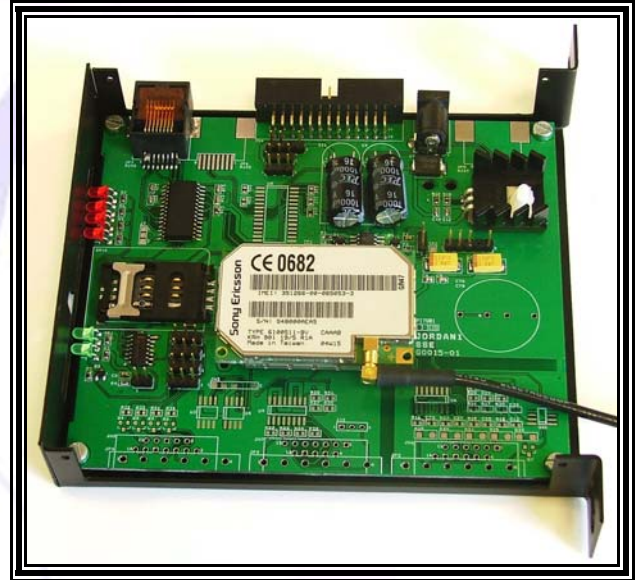
Ordering Information

- SSE-ERIKALLM

Jordan Module (GSM Modem)

The GSM Module is a GSM Cell Phone Modem used for data communication with the SSE-RTU11 via GSM Cell Phone Networks.

The module is connected to the SSE-RTU11 via a 26-Way ribbon Bus connector as explained below.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 131mm
- Width : 27mm
- Height : 114mm

Communication Options on modem

- Dial-Up
- SMS
- GPRS
- HSCSD

Connection Sockets

- Expansion bus and power : 26-Way Ribbon
- 2 x RS232 ports: RJ-45 EIA-561 Compliant
- Optional power plug: Phone jack.

Communication Ports

- 2 off RS232 Serial Ports RJ-45 EIA-561 Compliant
- One RF Connection to Antenna

Ordering Information

- SSE-JORDAN-1



QUALITY MANAGEMENT
Certificate

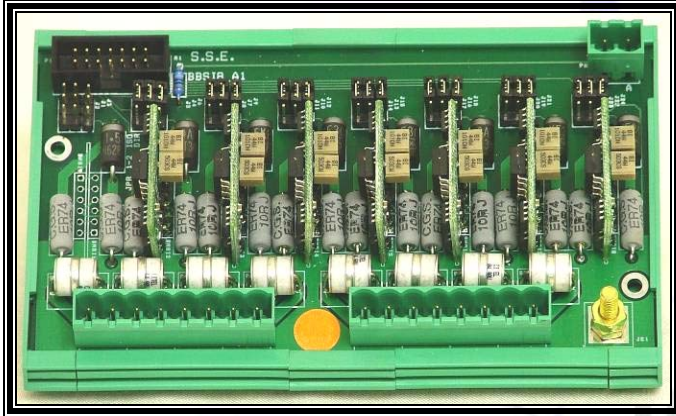
Voluntary participation in regular monitoring according to ISO 9001:2000



Galvanic Isolation with Surge Protection for Analogue Inputs (3, 4 or 8 Channels)

This unit is for additional protection of the Analogue inputs to the SSE-RTU11 and other I/O modules. This gives comprehensive Galvanic Isolation as well as lightning protection for harsh environments.

The Isolation is very handy in cases where self powered instrumentation is used or in typically sub-stations where earth differences and huge currents are flowing.



Voltage & mA

- Maximum I/O Voltage : 30Vdc
- Typically used for isolation of 4 – 20mA signals. Can not handle signals smaller than 4mA.

Physical Dimension

- Length : 135mm (for 8 channel)
- Width : 42mm
- Height : 80mm

Connection Sockets

- 14-Way Ribbon to the RTU or I/O Modules.
- 2 x 8 way screw pluggable termination connectors to field.
- 2-Way Power supply 12V+, Ground

Channel (IO) Options available

- Three Channels. (SSE-BBSI3C)
- Four Channels. (SSE-BBSI4C)
- Eight Channels. (SSE-BBSI8C)

Protection

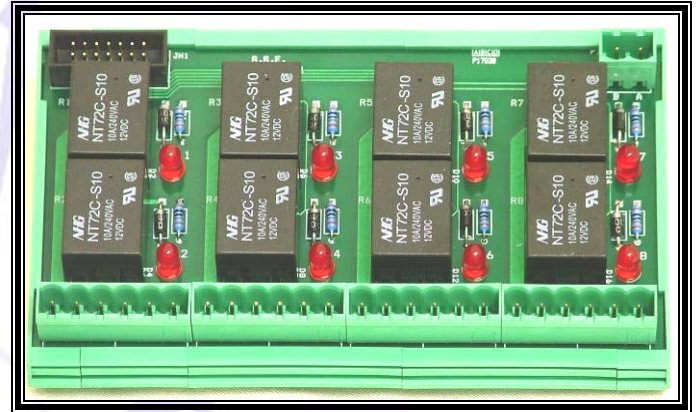
- 2.5kV Galvanic Isolation,
- 10kA Surge protection.

Ordering Information

- Three Channels : **SSE-BBSI3C**
- Four Channels : **SSE-BBSI4C**
- Eight Channels : **SSE-BBSI8C**

Interposing Relay Output (2, 4 or 8 Channels)

The module is used to convert the open drain output on the SSE-RTU11 and other output modules to dry contacts that are able to carry 10 Ampere at 220V AC.



Supply voltage

- Minimum : 9Vdc
- Typical : 13.8Vdc
- Maximum : 15Vdc

Current Rating

- Two Channels 90mA
- Four Channels 180mA
- Eight Channels 380mA

Physical Dimension

- Length : 61mm
- Width : 42mm
- Height : 80mm

Connection Sockets

- 14-Way Ribbon to the RTU or I/O Modules.
- Four x 6 way termination connectors
- 2-Way Power supply 12V+, Ground

Relay Options

- Two Channels 90mA with two relays on.
- Four Channels 180mA with four relays on.
- Eight Channels 380mA with eight relays on.

Ordering Information

- Two Channels : **SSE-BBRO2CH**
- Four Channels : **SSE-BBRO4CH**
- Eight Channels : **SSE-BBRO8CH**



QUALITY MANAGEMENT
Certificate

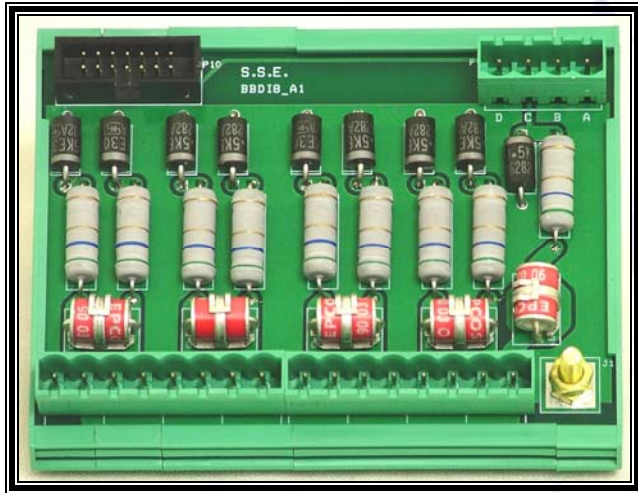
Voluntary participation in regular monitoring according to ISO 9001:2000



Digital Input Surge Protection (4 or 8 Channel)

This module is used mainly for Digital Input Lightning protection. No isolation is available on this module but the SSE-RTU11 and other DIN module have optical isolation.

The module is supplied by 12V that is supplied as common to 8 switching points on the plant. The module is ribbon connected to the SSE-RTU11.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 61mm
- Width : 42mm
- Height : 80mm

Connection Sockets

- 14-Way Ribbon to the RTU or I/O Modules.
- 2 x 8 way termination connectors.
- 4 Way Power supply 12V+, Ground.

Protection

- 10kA per channel.
- Maximum input voltage: 30Vdc

Channel (IO) Options available

- Four Channels.
- Eight Channels.

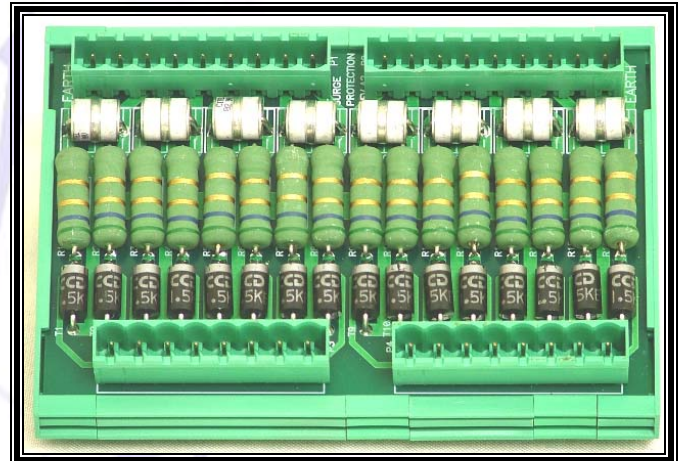
Ordering Information

- Four Channels : **SSE-SPU04CH**
- Eight Channels : **SSE-SPU08CH**

Digital input surge protection (2 or 16 Channel)

The module makes use of plug terminals in stead of the ribbon connection to the SSE-RTU11/14. The module is normally used with the SSE-RTU11/10 but can be connected to the SSE-RTU11/14 via a buffer board (SSE-BBCV).

These units are also available in a two channel version.



Supply voltage

- Minimum : 9Vdc
- Typical : 13,8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 113mm
- Width : 42mm
- Height : 80mm

Connection Sockets

- 2 x 9 way termination connectors
- 2 x 8 way termination connectors

Protection

- 10kA per channel.
- Maximum input voltage: 30Vdc

Channel (IO) Options available

- Sixteen Channels.
- Two Channels.

Ordering Information

- Two Channels : **SSE-SPU02CH**
- Sixteen Channels. : **SSE-SPU16CH**



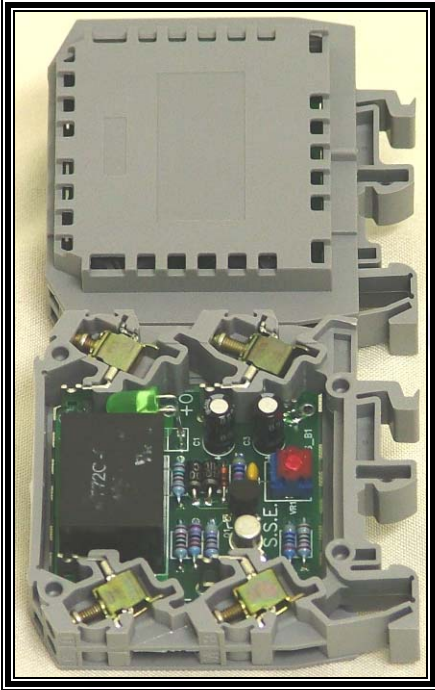
QUALITY MANAGEMENT
Certificate

Voluntary participation in regular monitoring according to ISO 9001:2000



Load Shed

The load shed is connected between the station standby batteries and equipment so as to cut power when the battery voltage reaches a critical preset low level after power failure. This prevents the equipment from completely depleting the batteries.



Supply voltage

- Minimum : 10.5Vdc (cuts power)
- Typical : 13.8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 63mm
- Width : 24mm
- Height : 55mm

Connection Sockets

- 12V positive and negative from the batteries
- 12V positive and negative to the equipment

Product options

- 12Vdc
- 24Vdc

Ordering Information

- SSE-LSHED12V
- SSE-LSHED24V

Look@ LCD Display

The display has an onboard CPU able to communicate intelligently with the SSE-RTU11 via a RS232 communication port. It can display 4 different values each in its own line at the same time. This display is normally used by the SSE-RTU11 to display limited plant information at a station.



Supply voltage

- Minimum : 9Vdc
- Typical : 13.8Vdc
- Maximum : 15Vdc

Physical Dimension

- Length : 96mm
- Width : 60mm
- Height : 35mm

Connection Sockets

- RS232 communication port: RJ-45 EIA-561 Compatible.
- Power: two pin pluggable screw terminal connector.

Ordering Information

- SSE-L@DISPLAY



QUALITY MANAGEMENT
Certificate

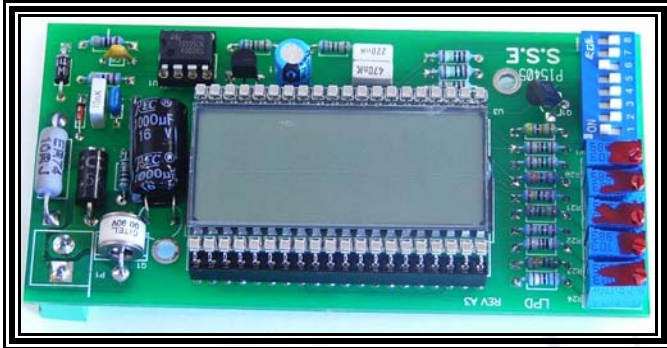
Voluntary participation in regular monitoring according to ISO 9001:2000



Loop Powered Display Module

This unit is normally used to connect inline to a 4-20mA loop for displaying the Engineering values for that loop, which is very handy for displaying the engineering values of each individual loop at a Station.

The unit normally mounts on the enclosure door.



Supply voltage

- Gets powered from the 4-20mA loop.

Physical Dimension

- Length : 96mm
- Width : 60mm
- Height : 35mm

Range of display

- 0 – 100 Range 1
- 0 – 500 Range 2
- 0 – 1000 Range 3
- The decimal point can be shifted to 3 different places

Connection Sockets

- 4-20mA loop

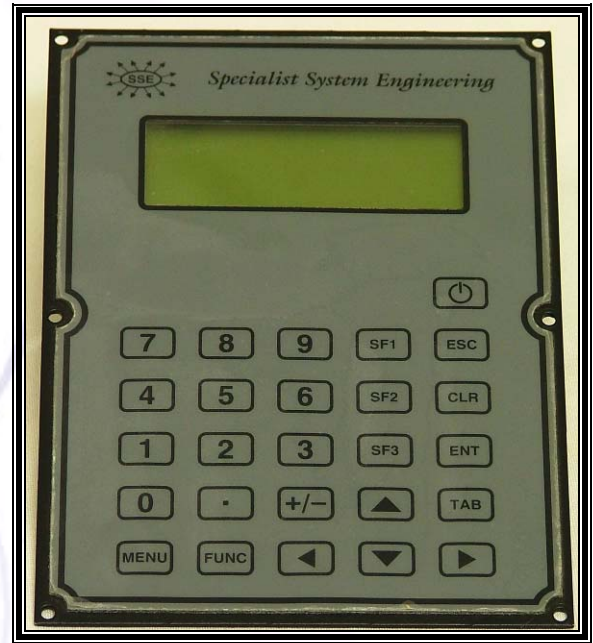
Ordering Information

- SSE-LPD

Liquid Crystal Display and Keyboard

This unit is able to change basic parameters on the SSE-RTU11, view the values of the analogue inputs and outputs and the digital inputs and output statuses. The unit also allows you to change the values and parameters as well as performing some basic tests.

The unit communicates through a RS232 port with the SSE-RTU11.



Supply Voltage

- The unit operates from 8 to 15VdC.

Current Consumption

- LCD Backlight off – 30mA
- LCD Backlight on – 200mA
- Switched off > 1uA

Physical Dimension

- Length : 160mm
- Width : 120mm
- Height : 35mm

Connection Sockets

- RS232 : DB-9 connector

Ordering Information

- SSE-LCDISPKBRD



MDS OEM Data Radio

The MDS OEM SERIES product is a complete family of value priced reliable 2 Watt (Max) Data (Digital) Radios for private point-multipoint SCADA and other Telemetry applications.



Physical Dimensions

- 165(W)mm x 44(H)mm x 120(D)mm

Power Supply Requirement

- 10 to 30Vdc
- Rx Supply Current - 75mA typical @ 13.8Vdc
- Tx Supply Current - 480mA typical @ 13.8Vdc
- Power Output adjustable 0.1 – 2 Watt

Data Interface

- RS-232 through DB-25 Connector
- Baud Rates Supported at Interface Port: 1200, 2400, 9600, 19200, 38400 bps
- Data Latency < 15 ms typical

General

- Frequency - 330 to 512MHz with 6.25KHz increments to any MAS channel pair
- Temperature Range – 60°C to -30°C
- Humidity – 0 to 95% @ 40°C
- Data Performance - 1 x 10⁻⁶ @ -108dBm
- Duty Cycle - 50%
- Key-Up time - 2ms
- ETSI 400MHz (4800 bps)
- Low current consumption and sleep modes for solar powered applications
- Keys on data
- Key line output for keying external devices on receive
- Configures via HHT, MDS Configuration Software or OEM processor

Applications

- Gas/Oil Production and Distribution
- Water, Gas and Electric Utilities
- Lotteries
- Traffic Control
- Industrial Process Control
- Railroad Communication System

Ordering Information

- TRE-EL705/2

MDS 4710 Data Radio

The 5 Watt (Max) MDS 4710 Data (Digital) Transceiver is field configurable as a master or remote radio. It can operate as a half-duplex or simplex radio. It supports all splits in duplex frequencies. When operating as a master station, full network diagnostics are available.



Physical Dimensions

- 143(W)mm x 50(H)mm x 184(D)mm

Power Supply Requirement

- 10.5 to 16Vdc
- Rx Supply Current - < 125mA
- Tx Supply Current - 2A Typical at 5Watt
- Power Output adjustable 0.1 – 5 Watt

Data Interface

- RS-232 through DB-25 Connector
- Baud Rates Supported at Interface Port: 1200, 2400, 9600, 19200, 38400 bps
- Data Latency < 15 ms typical

General

- Frequency - 330 to 512MHz with 6.25KHz increments to any MAS channel pair
- Temperature Range – 60°C to -30°C
- Humidity – 0 to 95% @ 40°C
- Data Performance - BER 1 x 10⁻⁶ @ -113dBm typical
- Duty Cycle - Continuous
- Key-Up time - 2ms
- Baud Rate - 4800bps
- Operational Modes - Simplex, half-duplex
- Keys on data
- Key line output for keying external devices on receive
- Configures via HHT, MDS Configuration

Applications

- Gas/Oil Production and Distribution
- Water, Gas and Electric Utilities
- Lotteries
- Traffic Control
- Industrial Process Control
- Railroad Communication System

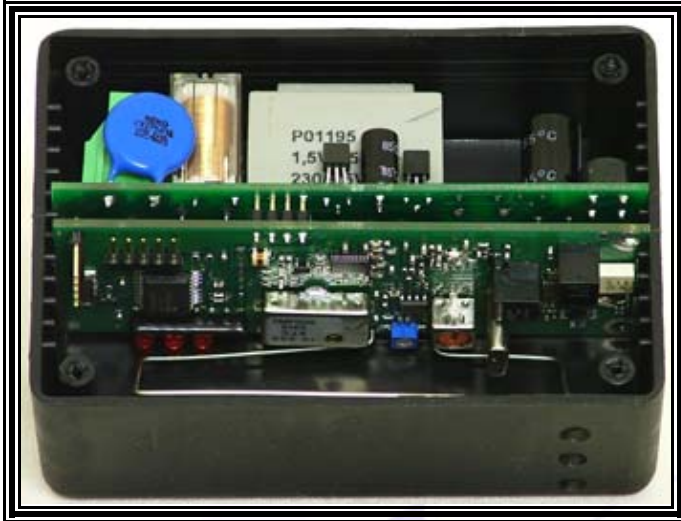
Ordering Information

- TRD-4710E



Load – Switch

The unit was designed to enable the client to control how much power is consumed by which equipment by means of radio frequency communication.



Frequency:

- The unit is able to operate at 146 – 155MHz but is licensed by ICASA to operate at 150.250MHz.

Contact Data:

- Configuration – 1 C/O contact or 1 N/O contact
- Type of contact – Single contact
- Rated current – 16 A
- Rated Voltage – 250Vac/440Vac
- Maximum breaking capacity AC – 4000VA
- Make current – 25A
- Contact material – AgNi 0.15 , AgCdO , AgCdO

Coil data:

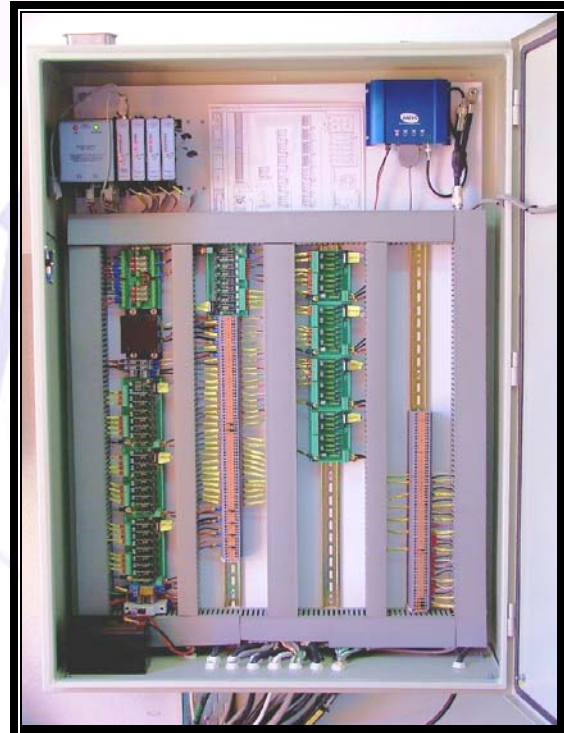
- Nominal Voltage – 5....110Vdc
- Nominal coil power – 500mW
- Operate category – 2 / b

Ordering Information

- **SSE-LOADSW**

Typical Remote Station

See the photo for a typical medium size SSE-RTU11 outstation.



Power Supply:

- Top Left hand corner of cabinet

RTU-10:

- Top Left hand corner next to SSE-PSU.

IO Modules:

- Top left hand corner, just right to the SSE-RTU11

Communication Module:

- Top right hand corner, the 2 Watt data (Digital) radio for reporting data to the master station
- through a wireless data network.

Power Distribution:

- Just below the SSE-PSU and the SSE-RTU11

Lightning Protection units:

- In the middle and bottom of cabinet.

Knife edge Terminal:

- In the middle and to the bottom of the cabinet.

