TERMINAL DETAILS FOR CARD TYPE 4 (16DI, 14DO)
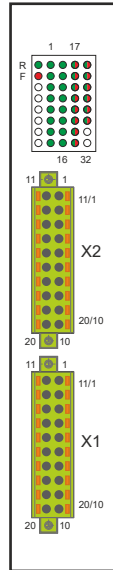
TERMINAL	SIGNAL		TERMINAL	SIGNAL
X2 - 1	DO1		X2 - 11	DO8
X2 - 2	DO2		X2 - 12	DO9
X2 - 3	DO3		X2 - 13	DO10
X2 - 4	DO4		X2 - 14	DO11
X2 - 5	DO5		X2 - 15	DO12
X2 - 6	DO6		X2 - 16	DO13
X2 - 7	DO7		X2 - 17	DO14
X2 - 8	---		X2 - 18	---
X2 - 9	Common1		X2 - 19	Common2
X2 - 10	---		X2 - 20	---

TERMINAL	SIGNAL		TERMINAL	SIGNAL
X1 - 1	DI1		X1 - 11	DI9
X1 - 2	DI2		X1 - 12	DI10
X1 - 3	DI3		X1 - 13	DI11
X1 - 4	DI4		X1 - 14	DI12
X1 - 5	DI5		X1 - 15	DI13
X1 - 6	DI6		X1 - 16	DI14
X1 - 7	DI7		X1 - 17	DI15
X1 - 8	DI8		X1 - 18	DI16
X1 - 9	GNDA		X1 - 19	GNDB
X1 - 10	---		X1 - 20	---

IO LED INDICATIONS

R	Run LED of IO Card
F	Fault LED of IO Card
LED1-16	DI1-16
LED17-30	DO1-14

For SBE DO Channels
Green - Select / Red - Execute

TERMINAL DETAILS FOR CARD TYPE 6 (32DI)
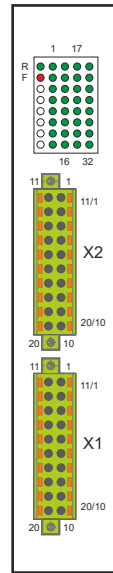
TERMINAL	SIGNAL		TERMINAL	SIGNAL
X2 - 1	DI1		X2 - 11	DI9
X2 - 2	DI2		X2 - 12	DI10
X2 - 3	DI3		X2 - 13	DI11
X2 - 4	DI4		X2 - 14	DI12
X2 - 5	DI5		X2 - 15	DI13
X2 - 6	DI6		X2 - 16	DI14
X2 - 7	DI7		X2 - 17	DI15
X2 - 8	DI8		X2 - 18	DI16
X2 - 9	GNDA		X2 - 19	GNDB
X2 - 10	---		X2 - 20	---

TERMINAL	SIGNAL		TERMINAL	SIGNAL
X1 - 1	DI17		X1 - 11	DI25
X1 - 2	DI18		X1 - 12	DI26
X1 - 3	DI19		X1 - 13	DI27
X1 - 4	DI20		X1 - 14	DI28
X1 - 5	DI21		X1 - 15	DI29
X1 - 6	DI22		X1 - 16	DI30
X1 - 7	DI23		X1 - 17	DI31
X1 - 8	DI24		X1 - 18	DI32
X1 - 9	GNDC		X1 - 19	GNDD
X1 - 10	---		X1 - 20	---

IO LED INDICATIONS

DOTMATRIX Dual Colour **RED**/**GREEN** LEDs for IO Indications

R	Run LED of IO Card
F	Fault LED of IO Card
LED1-16	DI1-16
LED17-32	DO17-32

MODEL DESCRIPTION

Serial No. 902000990xxxx (Model No.XXXX)

Card Type	Description
0	Blank
1	Combo Module (8 DI, 6 DO, 4 AI)
3	Combo Module (8 DI, 6 DO, 4 AI, 2AO)
4	Combo Module (16 DI, 14 DO)
6	32 DI Module

TABLE 1 - CARD TYPES
**Other IO combinations are available on request.*

ORDERING CODE

RTU 6049-E70 Mini - | X | X | X | X |

1st Slot Card Type*
2nd Slot Card Type*
3rd Slot Card Type*
4th Slot Card Type*
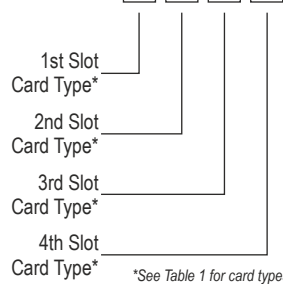
*See Table 1 for card types

SYNERGY SYSTEMS & Solutions

Synergy Systems & Solutions

A 1526-27, Green Fields Colony, Faridabad, Haryana - 121 010, India
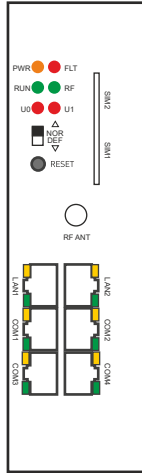Ph.: +91-129-2510501-2-3 :: Fax: +91-129-2510399
Email : sales@s3india.com :: Web.: www.s3india.com

HUSKY™
RTU 6049-E70 Mini

32 Bit Fan-less Microprocessor

Up to 4 nos. RS232/RS485 Ports

Up to 2 nos. 10/100 Ethernet Ports

Built-in 3G/4G Modem

Modular Isolated Digital, Analog I/O

Industry Standard Protocols

HUSKY RTU 6049-E70 Mini from Synergy Systems and Solutions is a compact Remote Terminal Unit (RTU) to cater to the needs of remote data collection / automated monitoring/controlling systems, which typically have very low I/O counts. Built using the proven technology of RTU 6049-E70, the Mini-RTU offers a customized and cost-efficient solution for remote data collection applications. The Mini-RTU features an embedded 32-bit microprocessor and a real-time operating system that provide the computing power to effectively meet the requirements of data collection and aggregation from a multiple devices, and to communicate the data to single or multiple central stations. When performing data collection, the RTU can be configured to operate in either "Store and Forward" or "Router" mode as per the site requirements.

The Mini-RTU is an ideal choice for the applications that require interfacing with intelligent devices and with a limited number of hardwired I/O. The built-in wireless RF modem provides the RTU with RF communication capabilities. This allows use of public wireless infrastructure like GSM/GPRS/3G/4G to connect the RTU with central SCADA stations.

The compact arrangement of the Mini-RTU allows it to be deployed in wall-mounted enclosures also. The Mini-RTU supports both DIN rail as well as flush mounting.

Application Areas

- ❍ **Feeder RTU**
- ❍ **Water Utilities**
- ❍ **Wireless I/O**
- ❍ **Automated Meter Reading**
- ❍ **Local Automation Unit**
- ❍ **Data Concentrator**

The RTU supports a rich set of communication interfaces to cater varied demands of industry. It is equipped with up to 4 nos. of RS232/RS485 ports, 2 nos. 10/100 Mbps Ethernet ports and a built in 3G/4G modem. The availability of protocols like IEC60870-5-101/103/104, DNP3, MODBUS, IEC 61850 allows for integration with multi-vendor devices.

The RF modem enables the RTU to be used in M2M (Machine-2-Machine) applications. When used in conjunction with our M2M gateway, a full-featured remote telemetry/data collection solution can be implemented, that is both secure and scalable.

The RTU has built-in analog and digital I/O for interfacing with local hardwired signals. All the I/O channels are isolated and surge-protected, for use in electrically harsh environments. The digital inputs support 1ms Sequence of Events recording, and the digital outputs support Select-Before-Operate function. The analog input channels support DC voltage and current inputs. Analog output option is also available that supports both voltage and current outputs.
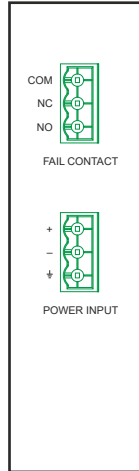
LED INDICATIONS

LED	Purpose	
PWR	Power ON	
FLT	Fault Entry Present	
RUN	1 Hz : Safe Mode	
	5 Hz : Normal Mode	
U0, U1	User Definable LEDs	
RF	Radio Module LED	
NOR/DEF	Normal / Default Mode	
LAN	▭	ON: Link
	▨	BLINK: Activity
	▮	ON: 100 Mbps
	▭	OFF: 10 Mbps
COM	▨	Tx
	▨	Rx

NO/COMMON POINT

Pin	Signal Name
1	COM
2	NC
3	NO

POWER CONNECTION

Pin	Signal Name
1	DC +ve
2	DC -ve
3	EARTH

TECHNICAL SPECIFICATIONS

I/O Slots	4
I/O Connections	Pluggable spring clamp connector
Ethernet Interface	RJ 45
Serial Interface	RJ 45
RF Modem	3G / 4G Radio Modem (Optional)
SIM Interface	Micro-SIM (Dual SIM support available (Optional))
Input Power	18~36VDC / 36~72VDC*
Power Consumption	25W Max.
Operating Temp.	-10~70°C
Relative Humidity	95% Non-condensing
Dimensions	(L)210mmX(D)190mmX(H)185mm
Weight	3.0 Kg

TECHNICAL SPECIFICATION OF COMM PORTS

Serial	Up to 4 serial ports
	DMA Operated
	RS232 / RS485 software selectable
	Bit Rate <= 115200
	Surge protected
	Isolation = 3 KV
Ethernet	Up to 2 ports
	10/100 MBPS with Auto MDI-X Surge protected Isolation = 1KV

Available on request

TECHNICAL SPECIFICATIONS

DI CHANNELS

Pulse Counter	1KHz maximum
BCD	Minimum 4 channels per BCD digit.
Isolation	3.7KV DC
Isolation between groups	500VDC
Protection	Surge & Overload
Input Filter	Settable from 1-255 msec in configuration
Chatter Filter	Yes

Nominal Input Voltage	24VDC / 48VDC*
On Input Range	15-30VDC / 38-50VDC
Off Input Range	0-12VDC / 0-24VDC
Input Current (per channel)	< 1mA / < 2mA
Status LED	Channel status. When lit Green, means ON

Available on request

DO CHANNELS

Isolation	1KV between field and system
Protection	Surge
Contacts	Potential Free NO Contacts

Status LED   Channel status.
● Channel Selected. ● Channel Executed.

AI CHANNELS

Voltage Inputs	0-10V DC 0-5V DC
	± 10V DC ± 5V DC
Current Inputs	0-20mA 4-20mA ±20mA Install the channel jumper to enable current mode.
Input Counts	Unipolar: 0 – 32767
	Bipolar: -32768 - +32767
Resolution	16 bit (15 bit data + 1 sign bit) both for inputs
Accuracy	0.1%
Input Impedance	Voltage Inputs: 1 MOhm nominal Current Inputs: 250 Ohm nominal
Isolation	Field & System 1500VDC Between Channels 500VDC
Protection	Surge & Overload

AO CHANNELS

Resolution	16 bit (15 data bits + 1 sign bit)
Accuracy	0.1% or better
Voltage Outputs	0-10V DC 0-5V DC
	+/- 10V DC +/- 5V DC
	Uninstall the channel jumper to enable voltage mode.
Current Outputs	0-20mA 4-20mA
	Install the channel jumper to enable current mode.
Output Characteristics	Voltage Outputs: Min 1 KΩ load Current Outputs: Loop compliance voltage 21V
Isolation	Field & System 1500VDC Between Channels 500VDC
Protection	Surge & Overload
Fault Alarms	Open Loop & Short Circuit

TERMINAL DETAILS FOR CARD TYPE 1 (8DI, 6DO, 4AI) & CARD TYPE 3 (8DI, 6DO, 4AI, 2AO)
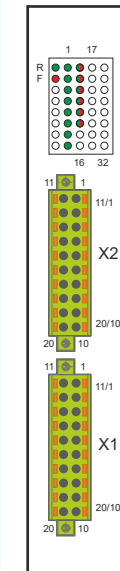
TERMINAL	SIGNAL	TERMINAL	SIGNAL
X2 - 1	DO1	X2 - 11	DI1
X2 - 2	DO2	X2 - 12	DI2
X2 - 3	DO3	X2 - 13	DI3
X2 - 4	DO4	X2 - 14	DI4
X2 - 5	DO5	X2 - 15	DI5
X2 - 6	DO6	X2 - 16	DI6
X2 - 7	---	X2 - 17	DI7
X2 - 8	---	X2 - 18	DI8
X2 - 9	Common	X2 - 19	GND
X2 - 10	---	X2 - 20	---

TERMINAL	SIGNAL	TERMINAL	SIGNAL
X1 - 1	AO1(+)*	X1 - 11	AI1(+)
X1 - 2	AO1(-)*	X1 - 12	AI1(-)
X1 - 3	AO2(+)*	X1 - 13	AI2(+)
X1 - 4	AO2(-)*	X1 - 14	AI2(-)
X1 - 5	---	X1 - 15	AI3(+)
X1 - 6	---	X1 - 16	AI3(-)
X1 - 7	---	X1 - 17	AI4(+)
X1 - 8	FP24V(+)	X1 - 18	AI4(-)
X1 - 9	FP24V(-)	X1 - 19	---
X1 - 10	SGND	X1 - 20	SGND

IO LED INDICATIONS

R	Run LED of IO Card
F	Fault LED of IO Card
LED1-8	DI1-8
LED9-14	DO1-6

For SBE DO Channels
● Green - Select / Red - Execute

*Available in Card Type 3 (8DI, 6DO, 4AI, 2AO)