

PRODUCT SPECIFICATION

Midrange Generic Control system

ROCS SCS02



ROV NETWORK LIMITED
 402 GREAT WESTERN ROAD,
 ABERDEEN,
 SCOTLAND
 AB10 6NR

<http://www.rov.co.uk/>
<mailto:mail@rov.co.uk>

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PRODUCT DESCRIPTION

The ROCs SCS02 Midrange control system is an example of a medium sized control package based on several products in the ROCS control system range.

This design is targeted at control skids, simple TMS systems and any module containing a combination of hydraulic control and electronic sensors with options for video cameras and lights. It consists of a slave PC104 control system containing a variety of I/O and a master controller consisting of a touch screen display with a small amount of digital and analogue I/O for Joysticks and switches.

The system shown here is only an example of what can be provided. Any combination of boards may be used from the wide selection available from the ROCS product range and the system is fully scaleable to increase the I/O capability at anytime.

The system consists of a master control electronics unit connected via a serial line to the Slave electronics unit. This carefully designed system has enough isolated digital and analogue I/O to operate a typical TMS or large tooling module. In addition, an LCD based display screen is connected to the master unit allowing data from either control unit to be displayed in a graphical representation of your system. The LCD has a touch screen capability allowing the whole system to be operated directly from the screen and a variety of pages to be used to display system data.

The system can be operated using the master electronics unit and its control panel on their own without the graphics screen. Alternatively it can be used with the touch screen graphics display on it own ie without the master electronics unit. All the system functions on the slave unit can be operated directly from the touch screen display.

ROCS7033 PC104 ENCLOSURE WITH ROCS SCS02 BOARD SET (SLAVE)

The Slave system consists of an anodised enclosure holding up to 8 PC104 cards and a small power supply. The PC104 Stack is secured inside the enclosure using an anti vibration and anti shock mounting system. External cooling fins help to dissipate heat from the system. The enclosure is sealed to IP65 rating. All wiring is taken to multi-pin D connectors fitted at each end of the enclosure. Alternative housings are available including longer enclosures to house additional cards. (*recommended maximum = 16*) The cards fitted in this SCS02 system are:-

1. Stack Power supply
2. CPU with 4 serial ports, 16 Ain, 4 Aout, 24 DIO.
3. 16 channel Analogue output card
4. 8 channel servo drive card
5. 8 channel analogue isolation card
6. 8 channel analogue isolation card
7. 24 channel solenoid driver card (Bi-polar or Uni-polar)
8. 12 channel relay card



A fibre optic multiplexer board may be optionally fitted to the system allowing all data and video to be transmitted via a single or multimode fibre to the master station. (*Price on application*). This particular board set will provide the following capabilities.

- | | |
|---|-----------------------|
| - 16 Bipolar Analogue input all optically Isolated | 16 Bit |
| - 8 Bipolar Analogue output, isolated for servo/proportional drives | 12 Bit +- 40mA /chan |
| - 12 Analogue output non isolated Use for light dimmers etc* | 12 Bit |
| - 12 Bipolar (24 Unipolar) isolated drives for solenoids, focus etc | 1 Amp per channel max |
| - 12 double pole isolated switching power relays | 1.5 A per contact |
| - 2 off fast counter timers | 100khz-10Mhz |
| - CPU | ZFx86 100Mhz |
| - 4 serial ports, 1 used for communications to the surface | 2 off RS485 optional |
| - Ethernet Port | 10/100 |
| - 2 USB Ports | |
| - IRDA port | |
| - 32 Meg Flash Disk | |

Onboard power supplies inside the enclosure provide power for sensors and additional components +- 12 Vdc, +5Vdc, +24Vdc. (a separate high power supply for valves and ancillary equipment is required)
Input power, 18 to 40Vdc coarse 24Vdc nominal. 1.5A – 3.0A

Isolated Analogue inputs can be voltage (up to +-10V) or current (up to +- 200mA), also resistance for temperature sensors and direct connection to 4-20mA sensors.

The system can directly drive servo valves, solenoid valves, lamps (via power relays), Cameras, focus/zoom controls and any ancillary equipment such as Sonars or survey systems.

The electronics can directly read water alarms, pressure and temperature sensors, flow meters and Intelligent sensors (*Digiquartz and altimeter*). With plenty of spare capacity, the system can operate other tools or read additional sensors including quadrature sensors, LVDT's etc.

Drivers can be provided for almost any serial sensor or control module including other items from the ROV Network product range such as intelligent servo and solenoid valve packs. The system is also fully compatible with our larger ROV control packages allowing direct control and communications from both surface and sub sea controllers.

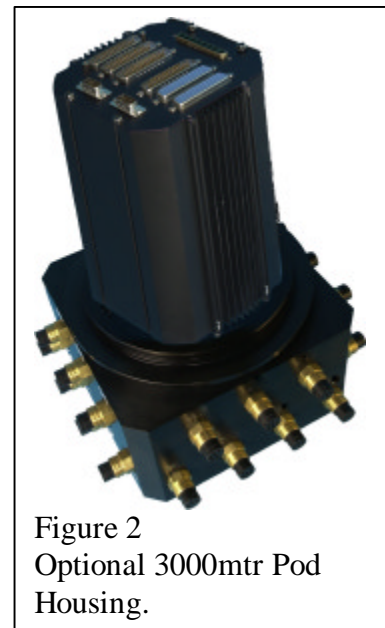


Figure 2
Optional 3000mtr Pod
Housing.

Programming of the control system is by ladder logic or "C" code. Onboard ROMDOS allows easy access to standard bios functions. The standard control system is provided un-programmed but with a library of functions including a fully functioning demo program that provides access to all system functions and can be easily modified to carryout specific auto-functions for individual projects.

Full technical support package ensuring the right product spec is used for your system.

A complete programming service is available, please contact us for details.

ROCS7034 12.1" TOUCHSCREEN WITH ROCS SCS02 BOARD SET (MASTER)

The Master control station consists of two PC104 cards and a colour touch screen for operator MMI. The PC104 stack allows a manual control station to be assembled containing Joysticks, potentiometers, sliders and switches. Your control panel may also hold LED's and an acoustic alarm for feedback purposes.

The PC104 stack is only required on systems using manual controls. The touchscreen can be used on it's own as the master controller but experience suggests most users prefer physical controls using the touch screen interface for set up and seldom used functions.

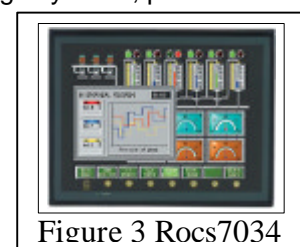


Figure 3 Rocs7034

The high quality graphics and large internal storage allow any number of screens to be created displaying the incoming data and allowing control over any of the system functions. Smaller screens can be provided to reduce costs or in situations where size is critical. Other options include networking capability and a video input allowing cameras pictures to be displayed along side the graphics.

12.1" COLOUR TOUCH SCREEN SPECIFICATION

Protection	Front panel up to IP65
Rated Voltage	24V DC or 110/220Vac optional
Permissible Range of Voltage Demand (maximum rating)	24V +- 10% DC
Cooling System	30W or less
Weight Approx.	passive
Dimensions W x H x D (mm)	2.7kg
Panel Cut-out (mm)	326.4*259.6*72.0
Case Colour	313 X 246.2 +- 0.5mm
Material	Black
Effective Display Area	Polycarbonate
Resolution W x H (dots)	12.1"-inch
Backlight	800 x 600
Backlight Average Life	Cold cathode FL
Function switches	Approx. 50,000 h
Interfaces	8 off
	2 off serial 232/485, Ethernet, Printer, Compact Flash Card



Figure 3
Master Touch screen

The touch screen controller comes pre programmed with at least 14 screens including: -

- 4 off Master control pages
- 2 off Video control page (Pan and tilts, zoom/focus)
- 4 off Calibration pages
- 4 off Diagnostics pages

These demo screens will give full access to all the onboard functions. A programming package is supplied with a detailed manual on editing the existing screens and creating additional graphics pages.

ROCS SCS02 BOARD SET (MASTER)

The colour TFT touch screen controller connects by serial lead to two PC104 cards consisting of.

1. Stack Power supply
2. CPU and data acquisition card with the following specification.
 - ZFx86 100 MHz CPU
 - 32 MB RAM
 - 10/100BaseT Fast Ethernet interface
 - IDE and Floppy disk Connectors for logging and data storage
 - 4 Serial, 1 Parallel, 2 USB Ports
 - 16 Analog In 16 bit / 4 Analog Out 12 bit
 - 24 Digital I/O



Figure 4
Master stack

This I/O capability can be easily expanded using any of our standard PC104 cards. The system can output serial data to interface with legacy control systems or survey equipment. The system can also receive data from other serial devices.

The stack is not supplied with an enclosure as the customer will be expected to create their own control panel for use with the system. (*Panels can be provided at customer request.*)

PRICE LIST

Please contact Chris or Andy at ROV Network LTD +44 1224 311113 for up to date prices

ROV Network Ltd
402 Gt Western Rd
Aberdeen
AB10 6NR
UK
+44 (0) 1224 311113
info @ (remove this text) rov.co.uk
www.rov.co.uk