





The ULC-350 is a 3G/4G SMS alarm kit that can be used to trigger custom messages for remote monitoring of equipment. Text messages are easily set by the user using a web browser, and can be triggered by the 16 digital inputs. Suits NPN, PNP, and dry contact style digital outputs. DIN rail mountable.

The product consists of two separate devices. Each of these products can be found individually on the Ocean Controls website (<u>oceancontrols.com.au</u>). User manuals and specifications are available for download.





YTD-451 Modbus DI module

ULC-035 Industrial Cellular Router

Quick Start

Install your SIM card(s) in the ULC-035 by removing the small screw and sliding away the side cover. You will find this screw adjacent to the power terminals. Only one SIM card is necessary, but two can be used to provide redundancy.





Attach at least one antenna to the ULC-035. The provided antenna is adequate for most situations.

Connect both devices via RS-485. Shielded cable is preferred, but any will suffice over a short distance. 'A' goes to 'DATA+' and 'B' goes to 'DATA-'.

Device	RS-485 Terminals
ULC-035	A and B
YTD-451	DATA+ and DATA-

Apply power to both devices. They can both share the same 10 to 30V DC supply. You should see an orange/red LED illuminates on the YTD-451, and the POWER LED illuminates on the ULC-035 (among others).

Device	Power Terminals
ULC-035	+ and -
YTD-451	+VS and GND

Connect a computer via the included Ethernet cable to any port among LAN1-LAN4 on the ULC-035. The default IP address is:

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192.168.1.1
```

If you are on this subnet, you should be able to enter 192.168.1.1 in your web browser and be served out the configuration page.

For more information, including changing your subnet on Windows, see the ULC-035 user manual (page 13).

You will be greeted with a login screen. Default username: *admin* Default password: *password*





Router Configuration

Most of the control has already been set up in the factory, but you will need to add your own phone number(s), and optionally change the SMS alarm message.

• Configure the Cellular Connection

Click on "Network" -> "Interface" -> "Cellular" to configure the cellular setting.

Enable SIM1 (and SIM2), and set "Network Type" to "Auto". Enter the corresponding SMS centre number for your cellular.

Carrier	SMS Centre Number
Telstra	+61418706700
Optus	+61411990001
Vodafone	+61415011501

Click "Save" and "Apply" to update the changes to ULC-035.

Status	Link Failover C	Cellular	Port	WAN	Bridge	WLAN	Switch	Loopback	
Network	Cellular Settings								
Interface			SIM1			SIM2			
	Protocol Type		IPv4	`	•	IPv4	~		
DHCP	APN								
Firewall	Username								
QoS	Password								
	PIN Code								
VPN	Access Number								
IP Passthrough	Authentication Type		None	`	•	None	~		
Routing	Network Type		Auto	`	•	Auto	~		
VERP	PPP Preferred								
	IMS Enable								
DDNS	SMS Center		+6141870870	00					
System +	Enable NAT								
	Roaming								
Service +	Customize MTU								
Maintanana	MTU		1500			1500			
Maintenance	Data Limit		0		мв	0	MB		
APP >	Billing Day		Day 1 🗸	of The Month		Day 1 V of Th	e Month		
	Connection Setting								
	Connection Mode		Always Onlin	ie 🔪					
	Re-dial Interval(s)		5		ī				
					_				
	Save								

• Adding/Changing Phone Numbers

Navigate to "System -> Phone & SMS -> Phone" using the left side menu.

Add phone numbers to the "Phone Number List". In "Phone Group List", create a phone group and



select phone numbers. Multiple numbers can be grouped together such that more than one person is notified of an alarm. Different groups can even be created and assigned to different alarms.

Click "Save" and "Apply" to finalize your update.

Status	Phone SMS				
Network +	Phone Number List				
System 🔻		Number		Description	Operation
General Settings		+61123456789		1	×
Phone & SMS	Phone Group List				
User Management			Group ID	1	
AAA			Description	Phone group 1	
Device Management			A	+61123456789	
Events					
Service +			v Sour	Connel	
Maintenance •			Jave		
APP >	Save				

• Serial Port Setup

Navigate to "Service" -> "Serial Port" for communicating via RS485. Choose the following values for the communication parameter:

- o Baud Rate: 9600
- o Data Bits: 8 bits
- Stop Bits: 1 bit
- o Parity: None

Set "Serial Mode" to be "Modbus Client", then "Save" and "Apply" all configuration.

Status	Serial	
Network	Serial Settings	
	Enable	
System >	Serial Type	RS485 ¥
	Baud Rate	9600 🗸
Service	Data Bits	8bits 🗸
VO	Stop Bits	1bits 🗸
Serial Port	Parity	None 🗸
	Software Flow Control	
Modbus Server	Serial Mode	Modbus Client 🗸
Modbus Client	Save & Apply	
матт		
SNMP		



Go to "Service ->Modbus Client -> Modbus Client", enable "Modbus Client Setting" and Set up preferred values for the Modbus Master's parameters. Remember to press "Save & Apply".

Enable				
Read Interval	0		s	
Max. Retries	3			
Max. Response Time	500		ms	
Execution Interval	50		ms	
Channel Name	DIO	~	Read	

• Create Channels & Set up Alarm

Go to "Service -> Modbus Client -> Channel", add channels and configure alarm setting on this page.

In "Channel Setting", fill up information for each channel, where

Name	DIx, refers to digital input of YTD-451
Slave ID	Address of YTD-451 (default: 1)
Address	Starting register number (normally equals to the value of x above)
Number	Length of registers this channel will contain
Туре	Coil (in this case)
Link	Serial 2

Channel Setting												
Name	Slave ID	Address	Number	Туре		Link		IP Address	Port	Sign	Decimal Place	Operation
DI0	1	0	1	Coil	\sim	Serial 2	~				0	×
DI1	1	1	1	Coil	\sim	Serial 2	~				0	×
DI2	1	2	1	Coil	\sim	Serial 2	~				0	×
												+

In "Alarm Setting", set up the alarm for each channel. You will have list of 16 alarms corresponding to each digital input on the YTD-451, if you choose to use all digital input.



If you click on the "pen" icon on each one, a box will appear with the alarm settings. Towards the bottom of the box there is a text box called "Abnormal Content "and this is the message you will receive when digital input is HIGH if "Condition" is set to be "TRUE". By default, the SMS is a detailed message with time, condition, and current status of the digital input. These messages can be altered to say something more descriptive for your application, EG "pump room 4 VFD fault", or "Eastern Chook shed under temperature."

Alarm Setting			
	Name	D10	~
	Condition	TRUE	~
	Alarm	🗹 SMS 🗌 Email	
	Phone Group	1	\sim
	Normal Content	Note: \$YEAR/\$MON/\$DAY \$TIME, get NORMAL data \$VALUE from address \$ADDRESS of channel \$NAME. (Abnormal scope is \$CONDITION)	5
	Abnormal Content	Note: \$YEAR/\$MON/\$DAY \$TIME, get ABERRANT data \$VALUE from address \$ADDRESS of channel \$NAME. (Abnormal scope is \$CONDITION)	s
	Continuous Alarm		
	Save	Cancel	

Once you have finished all changes, press "Save" and "Apply".

Your equipment is now ready.



Wiring Example (Wet Contact; NPN or PNP)

