

Manual Hydrostatic Water Depth Probe Model 6542D



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1.0 INTRODUCTION

This manual describes the operation of a submersible pressure and temperature probe (Model 6542D) in a Starlog data logging system.

This probe is an INW submersible pressure and temperature smart sensor PT12/SDI-12

For more info please refer to INW:

PT12/SDI-12 Datasheet user guide: PT12 SDI-12 Datasheet

PT12/SDI-12 Typical Specs: PT12 SDI-12 Typical Specs

PT12/SDI-12 User Manual: PT12 SDI-12 Manual.pdf



1.1 Models

The Water Depth Probe is available in 3.5m, 10m and 20m ranges. It can come in stainless steel or titanium housing. Cable length is to be specified at the TIME of order.

Model	Depth Range	Housing	Resolution
6542D-A	0 to 3.5 metre	Stainless Steel	±3.5mm
6542D-B	0 to 10 metres	Stainless Steel	±10mm
6542D-C	0 to 20 metres	Stainless Steel	±21mm
6542D-T-A	0 to 3.5 metre	Titanium	±3.5mm
6542D-T-B	0 to 10 metres	Titanium	±10mm
6542D-T-C	0 to 20 metres	Titanium	±21mm
6542D-CBL	NA	To be used with SS probe	
6542D-T-CBL	NA	To be used with Titanium probe	

The model numbers are:



2.0 USING THE HYDROSTATIC WATER DEPTH PROBE WITH STARLOG

Unidata's instruments are designed for automatic monitoring and collection of data in a Starlog data logging system. When the instruments are connected to any Unidata logger range, data sensed by the instruments is logged and stored according to a program you define using Starlog V4 Software.

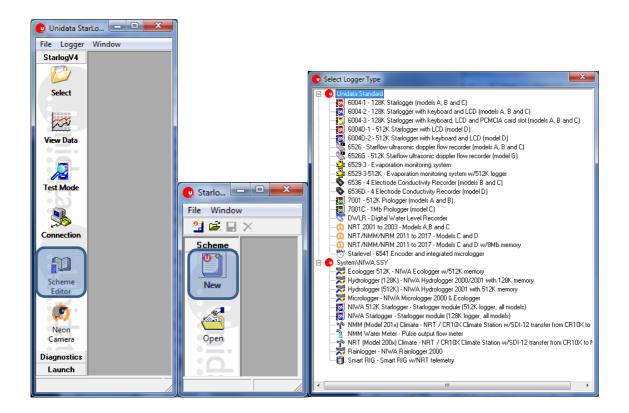
This section provides you with information you will find helpful in creating and executing a Water Depth Monitoring Scheme.

2.1 Choosing a Logger

Any of the Starlog range of data loggers or Neon NRTs can be used with this instrument to record water depth and temperature.

2.1.1 Creating a 6542 Water depth and Temperature scheme

1. Open the **Scheme Editor**, **New** and **Select Logger Type** (Starlogger or NRT range)





2. Select the **Instruments** menu, then select SDI Transducer – Generic SDI-12 transducer Instrument and **Add** Instrument

N			
×			
Scheme Instrum	ients		
Instrument Library			
PDLTRANS - Ur	idata Instrument Library		
			- 1
CatCode	Instrument	Description	Family
532x € 6541	Flow Transducer	Paddle wheel flow transducer (type A,B,C and E)	Hydro
	Water Level Instrument	HSID Shaft encoder	Hydro
GENPT	Pressure Transducer	Generic analogue depth transducer	Hydro
8 6104I	Current loop	Current input module	Input
6104V	Voltage	Voltage input module	Input
9 .6113A	Digital input module	16 bit digital input module	Input
🔮 6118A	Counter module	Digital counter module	Input
🚯 6514x	Current Shunt	Current shunt measurement (all ranges)	Input
FREQUENCY	Generic Frequency	Universal Frequency instrument	Input
A RTDPUSH	RTD Push	NRT Real Time Data automated push	Logger
🗐 SCHEME	Embedded Scheme	Stores the scheme information on the logger	Logger
MODBUILD -	MODBUS Builder	Import / create large MODBUS data tables	MODBUS
🚯 6122A	MicroWire	4-20mA output interface for StarLogger	Output
6525A	Relay module	4 channel relay control module	Output
6526LCD	LCD Display	External LCD display for all loggers	Output
	Scheme Version	Maintain a scheme version channel	SCHEME
SDI	SDI Transducer	Generic SDI-12 transducer	SDI-12
	Splitter	Solit 32-bit channels into two 16-bit channels	SDL12
SDIBUFF	Buffered SDI Transducer	Generic SDI-12 transducer with buffered response	SDI-12
	Merger	Merge two 16-bit channels into one 32-bit channel	SDI-12
SDITASK	SDI Task Table	SDI-12 multiple sensor task table	SDI-12
BOUNDCHAN		User selectable channel	System
BUTTONS	Test Mode Buttons	User configurable test mode buttons	System
CUSTOMACTI		-	
		Execute a custom VB script within StarlogV4	System
		Scheme information report generator	System
SITEID	Site ID	User settable test mode Site ID instrument	System
6110A	Thermocouple	Low level thermocouple amplifier	Temperature
6507	Thermistor	Unidata thermistor temperature probes (Red, Yell	Temperature
👃 6515A	AD590	AD590 temperature probe	Temperature
6535A	LM34	Linear temperature probe	Temperature
	Time channels	Day of week, minute of day and time of day cha	Time
™ 12L	Time till log	Seconds until log buffer 0 log scan	Time
NRTBATT	NRT Battery	Internal and External battery voltages	Utility
PH	рH	Generic pH sensor	Water Quality
NMMALARMS	Neon Alarms	Send generic alarm message to Neon using sch	XML Instrumen
	Output Controller	Manual output control	XML Instrumen
	No	,dd <u>D</u> el	
	<u>N</u> ew <u>A</u>	dd <u>D</u> el	



3. Double click on the newly added instrument to edit transducer's name, description and SDI12 Address.

Edit channel info: label, units, multiplier, offset and format

To add additional channels select Add

말 SDI Transducer #2	
Generic SDI-12 Trai	nsducer
	Name SDI Transducer #2 Description Address: Parameter: Data Type Floating Point SDI V1.3 Options Command M (Start Measurement) Use CRC
Unidata	Refresh Rate:
	Label SDI Channel Delete Delete Units Multiplier 1 Offset 0 Format #####0 Channel Visible SDI Wizard
Help	<u>C</u> ancel <u>O</u> K



Editing Channel "Depth"

♦ PT12	
Pressure Transduce	r
Unidata	Name Description Pressure Transducer Address: SDI00: SDI-12 Address 0 Parameter: 0 Data Type Floating Point SDI V1.3 Options Command M (Start Measurement) Use CRC Refresh Rate:
Help	<u>C</u> ancel <u>O</u> K



Adding and editing channel "Temperature"

> PT12	×
Pressure Transduce	≥r
Unidata	Name PT12 Description Address: Address: SDI00: SDI-12 Address 0 Parameter: 0 Data Type Floating Point SDI V1.3 Options Floating Point Command M (Start Measurement) Use CRC Image: Start Measurement) Refresh Rate: Image: Log Interval Start Measurement) Refresh Rate: Image: Log Interval Start Measurement) Depth Temperature Depth Temperature Units Deg C Multiplier 1 Offset 0 Format #####0.0 Channel Visible Image: Start Measurement Start Measurement Measureme
	<u>C</u> ancel <u>D</u> K



Adding and editing channel "Battery"

♦ PT12		
Pressure Transduce	er	
Unidata	Name PT12 Description Pressure Transducer Address: SDI00: SDI-12 Address 0 Parameter: 0 Data Type Floating Point Data Type Floating Point SDI V1.3 Options Image: SDI V1.3 Options Command M (Start Measurement) Image: SDI V1.3 Options Command M (Start Measurement) Image: SDI V1.3 Options Refresh Rate: Image: Log Interval Continuous Image: SDI V1.3 Options Read Time (s) 40 Image: SDI V1.3 Options Depth Temperature Battery Ints Volts Image: SDI Vits Multiplier 1 Offset 0 Format #####0.00 Image: SDI Wizard Image: SDI Wizard	
	<u>Cancel</u>	



Click OK once all channels are complete, making sure the Read Time(s) is set to a multiplier of the scan rate.

😟 StarlogV4 S	cheme Editor [Editing: FS_10m - NRT/NMM/NRM 2011 to 2017 - Models C and D]	
File Window	1	
😫 🚔 日	×	
Scheme Settings	r	
Log Buffer Description Events New	Communications Direct to COM3 [Default connection] Direct to COM4 Direct to COM1 Direct to COM2 Baud Rate 9600 Telemetry Switch	E
Open Save Library Code XML	Delete Add Advanced	•



2.1.2 What to Log

Raw – the value read at the log interval

Make the following selections in the Log Buffer window:

Open the log buffer window and select the RAW values that you would like to record and the log interval (how often to record readings), an example shown below is recording values every 5 minutes.

File Window	1					
😫 🖨 🖬 🗙						
Scheme Settings Settings Instrume Log Buffer Events New C	Main Buffer 🔹	Irstrument Channel PT12: Depth PT12: Temperature PT12: Battery NRT Battery: Internal Battery NRT Battery: External Supply	RAW			



3.0 SPECIFICATIONS

Range (metres of water): 3.5 Accuracy (mm): ± 3.5 Resolution (mm): 0.05

Range (metres of water): 10.5 Accuracy (mm): ± 10.5 Resolution (mm): 0.16

Range (metres of water): 21 Accuracy (mm): ± 21.5 Resolution (mm): 0.32

Operating Temp: -5°C – 70°C Over Range Protection: up to 2 times fs Operating Voltage: 9.0 – 16VDC Power Supply Current: Active 3mA average / 10mA peak Power Supply Current: Sleep 150µA Digital Output: SDI-12 v1.3 Diameter: 19mm Length: 203mm long Weight: 400 g Casing: Marine grade stainless steel 316 or titanium Vented cable: 8.7mm OD, black polyurethane jacket, braided screen