PLA
PROCESS ANALYSERS

SmartDiver®
MUD DIVER®

POCKET GUIDE
OPERATING & CONFIGURING

INDEX

SMARTDIVER® COMPONENTS

Control Panel
(Touchscreen)

PLC & HMI

Power Supply

Support Legs

Sensor Junction Box

Slip-Ring
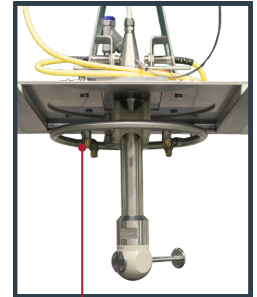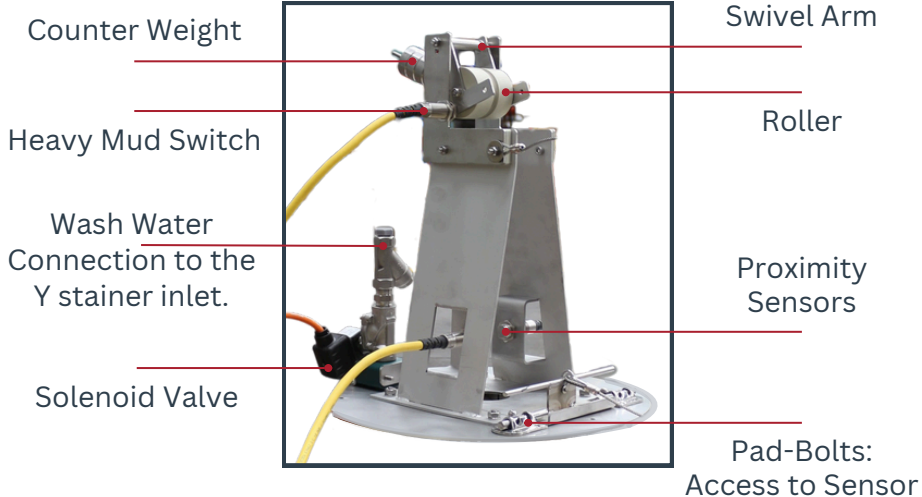
Sensor

SMARTDIVER® COMPONENTS

Mounting Frame

Cable Drum

Sliding Runway
(Optional Component)

Washbay Assembly

WASHBAY COMPONENTS

Counter Weight

Swivel Arm

Heavy Mud Switch

Roller

Wash Water Connection to the Y stainer inlet.

Proximity Sensors

Solenoid Valve

Pad-Bolts: Access to Sensor

Spray Ring & Nozzles

CONTROL PANEL

TOUCHSCREEN
Adjust Settings
View Trends
View Alarms

ALARM RESET
Toggle the
2-position switch
RUN-STOP-RUN*
to reset Alarm

EMERGENCY STOP
Safety quick stop
Removes power to the
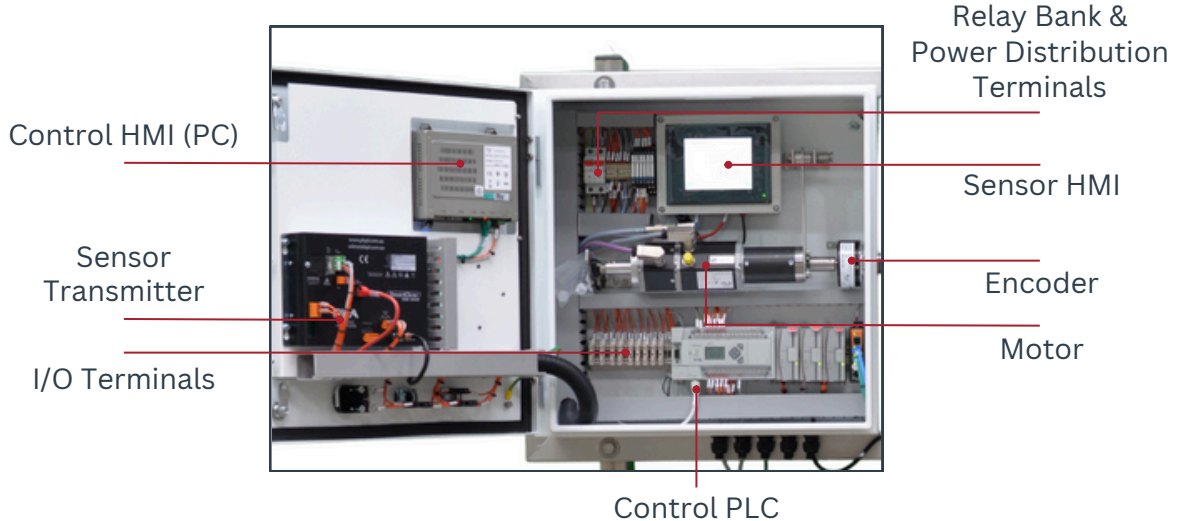motor

ALARM LIGHT
Indicates an Alarm
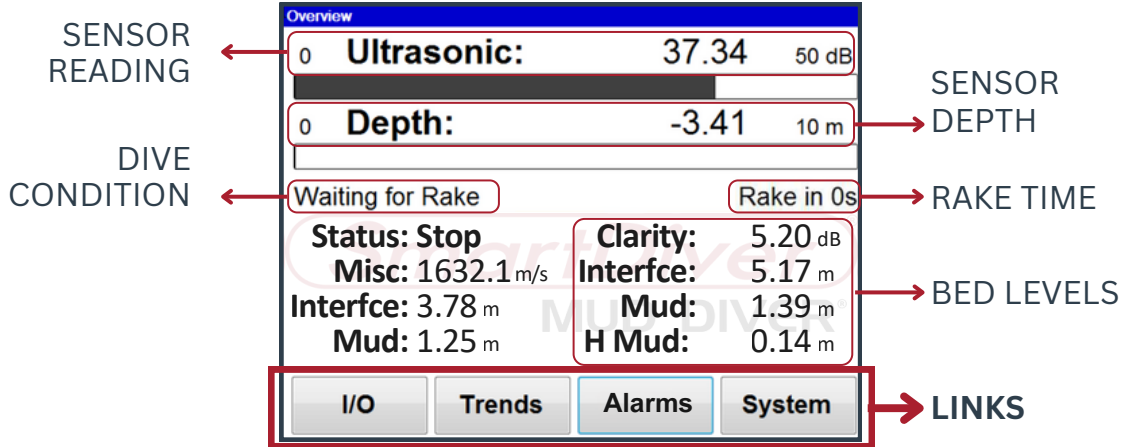
TWO POSITION SWITCH: RUN/STOP
Automatic dive operations
Raise sensor to wash bay and put into STOP MODE

**May appear as START-STOP-START in some models*

ENCLOSURE COMPONENTS

Control HMI (PC)

Relay Bank &
Power Distribution
Terminals

Sensor HMI

Sensor
Transmitter

Encoder

Motor

I/O Terminals

Control PLC

HMI - SCREEN OVERVIEW

SENSOR READING

SENSOR DEPTH

DIVE CONDITION

RAKE TIME

BED LEVELS

LINKS

Overview

| 0 | **Ultrasonic:** | 37.34 | 50 dB |

| 0 | **Depth:** | -3.41 | 10 m |

Waiting for Rake | Rake in 0s

Status: Stop
Misc: 1632.1 m/s
Interfce: 3.78 m
Mud: 1.25 m

Clarity: 5.20 dB
Interfce: 5.17 m
Mud: 1.39 m
H Mud: 0.14 m

| I/O | Trends | Alarms | System |

HMI - SCREEN OVERVIEW

OPERATING STATUS:

- MANUAL
- STOP
- RUN
- WARNING (ALARM)
- FAULT (ALARM)
- PROCESS (ALARM)
- SYSTEM (ALARM)
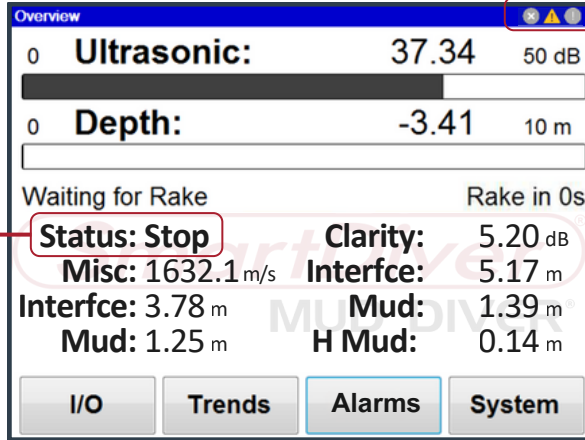
ALARM NOTIFICATIONS:

❌ FAULT

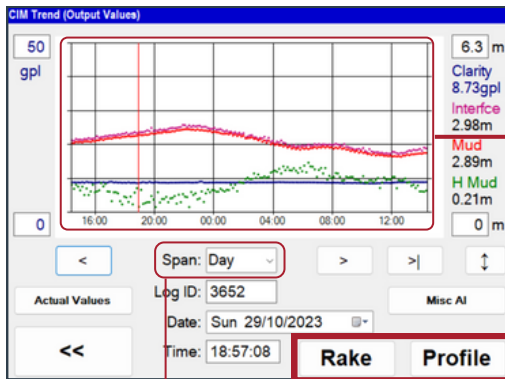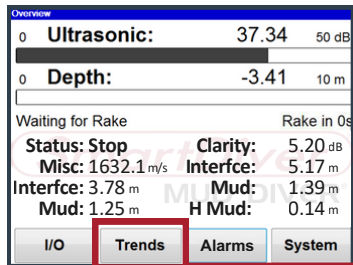⚠️ WARNING

⏺ PROCESS

⏺ SYSTEM

I/O - SCREEN OVERVIEW
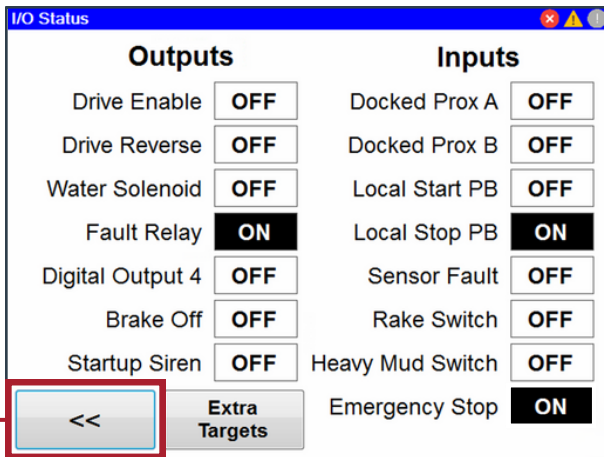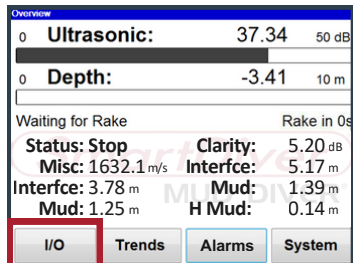
BACK LINK:

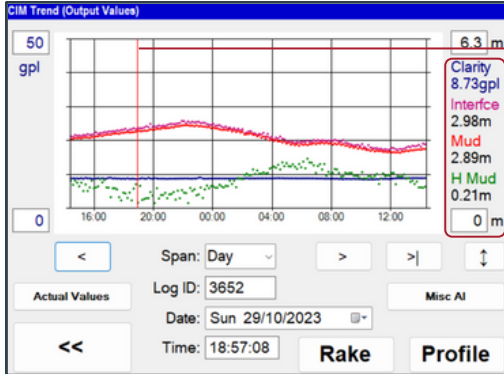To go back to the previous menu. Appears on all windows.

HMI - TREND SCREEN

Each dot denotes an individual dive with a time stamp and log ID

LINKS

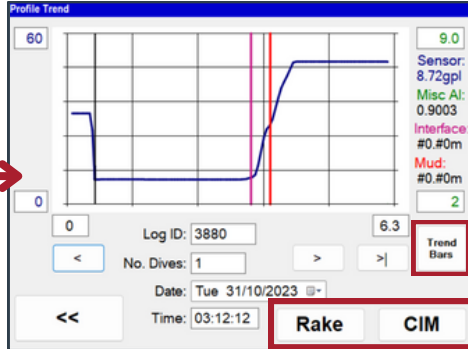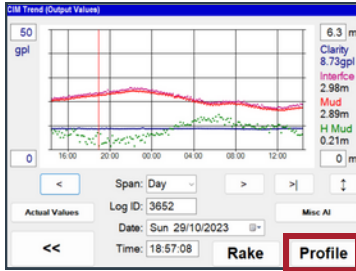SPAN SELECTION:

WEEK, DAY, 5 HOURS, OR 1 HOUR

HMI - TREND SCREEN

To view specific values for any particular Dive:
- Tap any location on the Timeline
- A RED vertical line will appear at your selected point
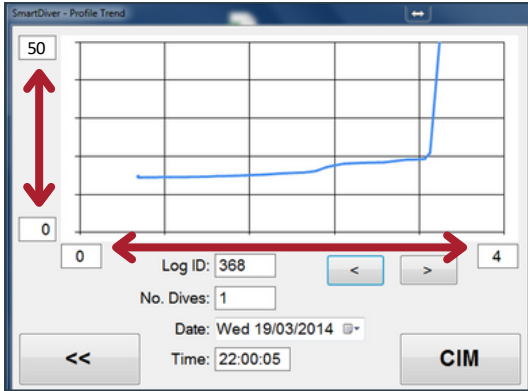- The corresponding values will be displayed in the panel on the right

HMI - PROFILE SCREEN

BLUE LINE:
SENSOR READING -
SOLIDS vs DEPTH

VERTICAL REFERENCE LINES
PINK: INTERFACE LEVEL
RED: MUD LEVEL

Toggles the visibility of
vertical reference lines on
the trend graph.
This helps identify the
Interface and Mud levels.
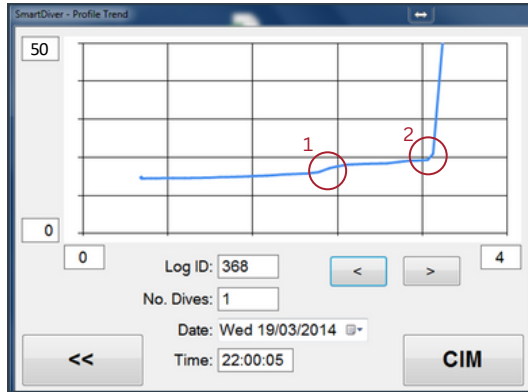
LINKS

DIVE PROFILE EXPLANATION - AXIS

Y-AXIS (VERTICAL):
- Shows solids concentration measured by sound attenuation
- Range: 0 to 50 dB

X-AXIS (HORIZONTAL):
- Represents tank depth
- Starts at liquid level (0) on the left
- Increases in depth as you move right

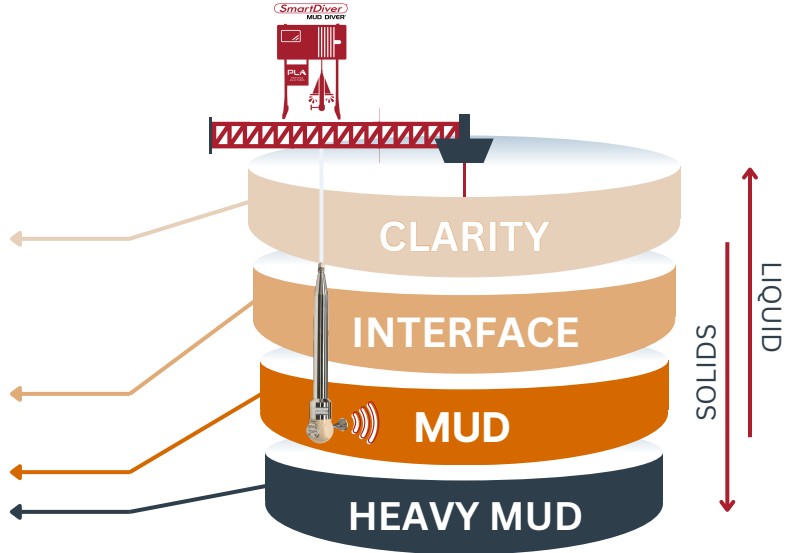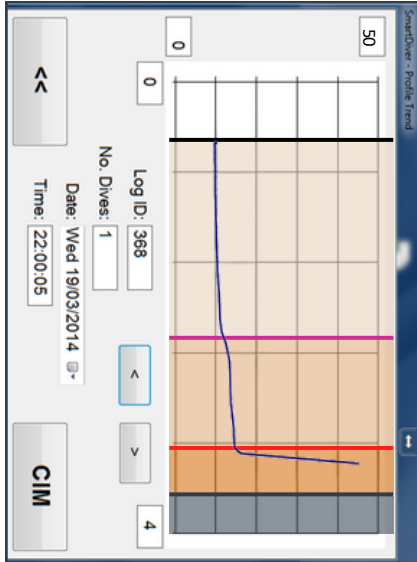# DIVE PROFILE EXPLANATION

1. SMALL INCREASE = **INTERFACE**

2. LARGE INCREASE = **MUD**

ONE DIVE PROFILE
(Suspended solids vs Depth)

⚠ INCREASE IN SENSOR READING EQUATES TO AN INCREASE IN SUSPENDED SOLIDS CONCENTRATION

PROFILE ORIENTATION TO THE THICKENER

HMI – LOG IN ACCESS & SYSTEM PAGE

SYSTEM PAGE

⚠ Log in code is **9786**

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HMI – CONFIGURATION PAGE & SYSTEM LOGS

CONFIGURE DEVICE SETTINGS
- a. PLC HMI Time adjustment
- b. PLC IP address
- c. Serial number ID
- d. Name of Site / Thickener
- e. Data file location

HMI & PLC
program versions
CMOS battery
voltage level.

**LIST OF SYSTEM DIAGNOSTIC
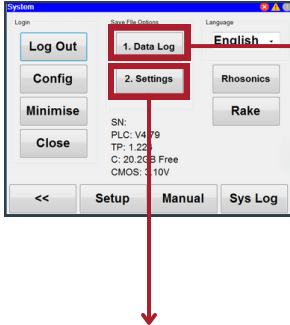LOG ENTRIES**

HMI – SETUP PAGE
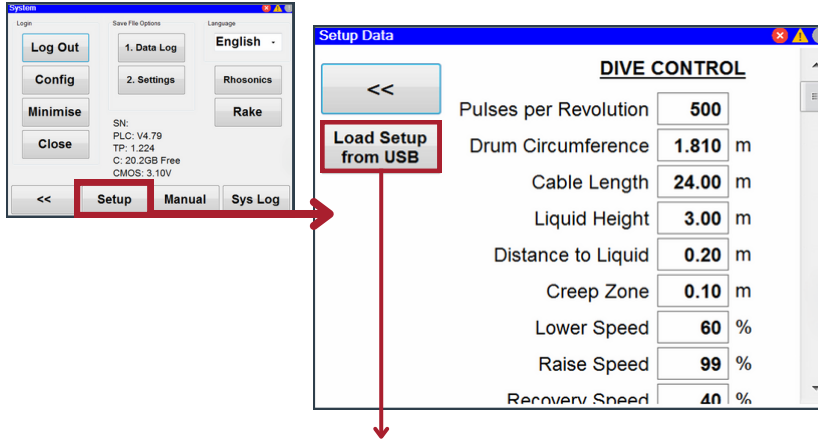
Load from .CSV File

The setup page has 5 segments.

1. Dive Control
2. Rake
3. Sensor
4. Alarms
5. Outputs

HMI – SAVING DATA LOG

DATA LOG:
All the historical dive records from this SmartDiver® will be saved to your USB memory stick.
This will save:
- Clarity, Interface and Mud (CIM) Trends
- Dive Profiles
- Fault Log Records

SETTINGS:
All the Settings from this SmartDiver® will be saved to your USB memory stick or your Computer's hard drive.
This will save:
- Settings Data from Setup Page

MANUAL OPERATION DISCLAIMER

⚠ **USE MANUAL MODE ONLY IF YOU WANT TO:**
- CHANGE THE SENSOR FOR A NEW SENSOR
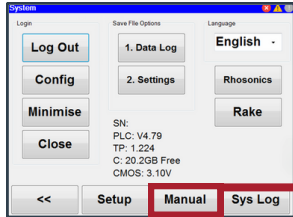- INSPECT / CLEAN THE SENSOR BY REMOVING IT FROM THE WASH BAY
- WORK ON THE WASH BAY

⚠ **WARNING: IN MANUAL MODE, SENSOR IS NOT SYNCHRONISED WITH THE RAKE AND RISKS COLLISION WITH RAKE DURING LOWERING.**
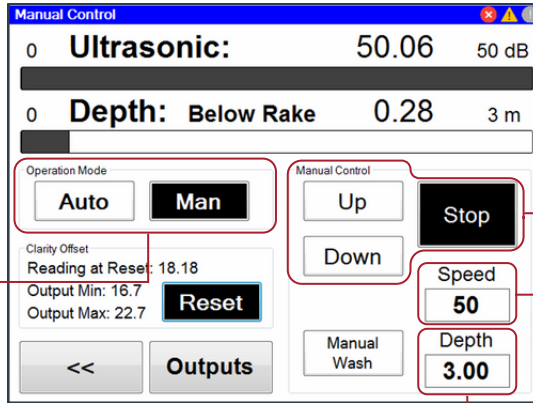
⚠ **WHEN SWITCHING FROM MANUAL TO AUTO MODE WITH THE 2-POSITION SWITCH IN RUN, THE DIVER MAY BEGIN A DIVE SEQUENCE IMMEDIATELY.**

HMI - MANUAL OPERATION

Toggles between AUTO & MANUAL Mode

STOP/MOVE SENSOR MANUALLY

MOTOR SPEED: FOR SENSOR ASCENT & DESCENT

⚠ SAFETY FEATURE - DEPTH LIMIT

IN MANUAL MODE, THE SENSOR STOPS AT THIS DEPTH & CANNOT GO LOWER.

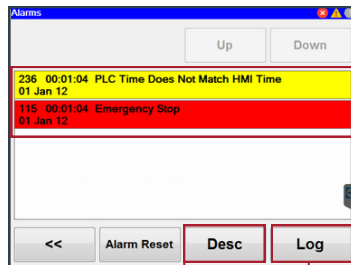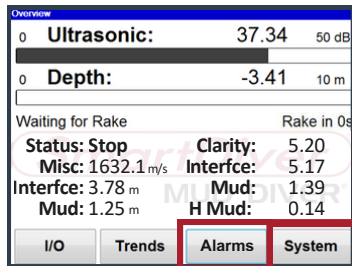ELIMINATES ACCIDENTAL SENSOR LOSS TO RAKE.

HMI - SENSOR CLEANING

(!) The Sensor's readings can drift due to scale buildup.

Clarity offset corrects this while still reflecting short-term changes and flares in all bed-levels.

(!) **CLARITY OFFSET NEEDS TO BE RESET AFTER CLEANING OR DESCALING THE SENSOR.**
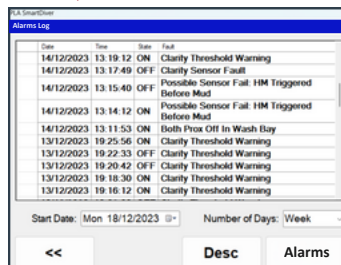
HMI - ALARM SCREEN

Active Alarms appear here

ALARM DESCRIPTION PAGE:

Lists all possible ALARMS with their remedies

ALARMS LOG PAGE:

Lists all Closed/ Acknowledged ALARMS

SmartDiver
MUD DIVER®

CLICK HERE TO SEND A SERVICE REQUEST