

Gaining Advantage

ThermoFisher
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**dEX 2.0 Software
for DataTaker DT80 Series**

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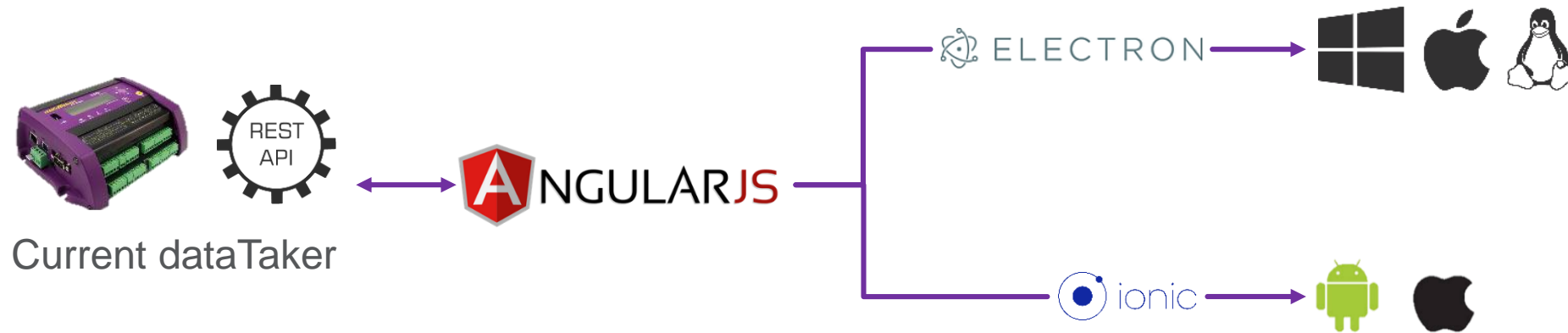
[Q&A](#)

Design Philosophy



- AngularJS is an open source full featured **JavaScript framework**
- AngularJS is a structural framework that can be of help in using **Single Page HTML** for declaring dynamic views in web-apps
- **Promotes Code Reusability** – With Angular, developers can reuse the codes that were previously used in other different application, thus promoting code reusability and making Angular a unique and outstanding framework
- **Faster Application Development** – Angular makes everything from development to testing and maintenance quite fast and quick. The MVC (model view controller) architecture assures this
- **Play Components** – With AngularJS, you can add existing components to a new application by simply copying and pasting the code

System Architecture



Software Modules

API Interpreters

- dataTaker Series 3 & 4
- Next Generation DT products



Angular JS Shared Modules

- Visualizations Module
- Device Configuration Module
- Data Explorer
- User Preferences



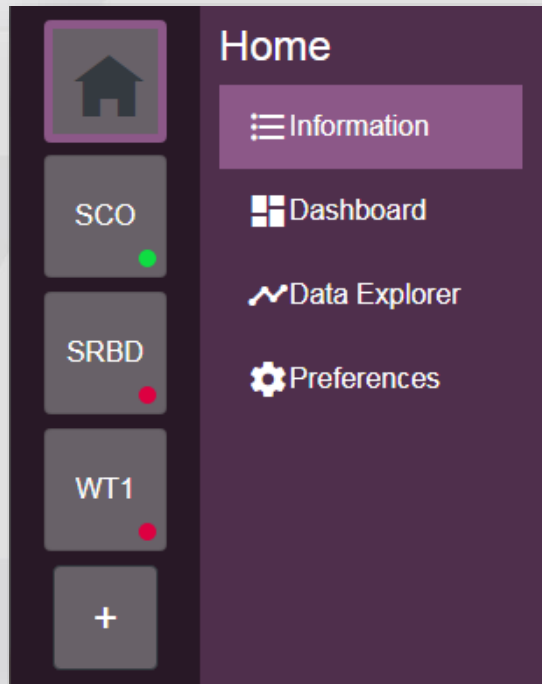
Apps

- Desktop app
- Mobile app (**Stage 2- Q2 2020**)
- Webpage application (**Stage 3- Q3 2020**)



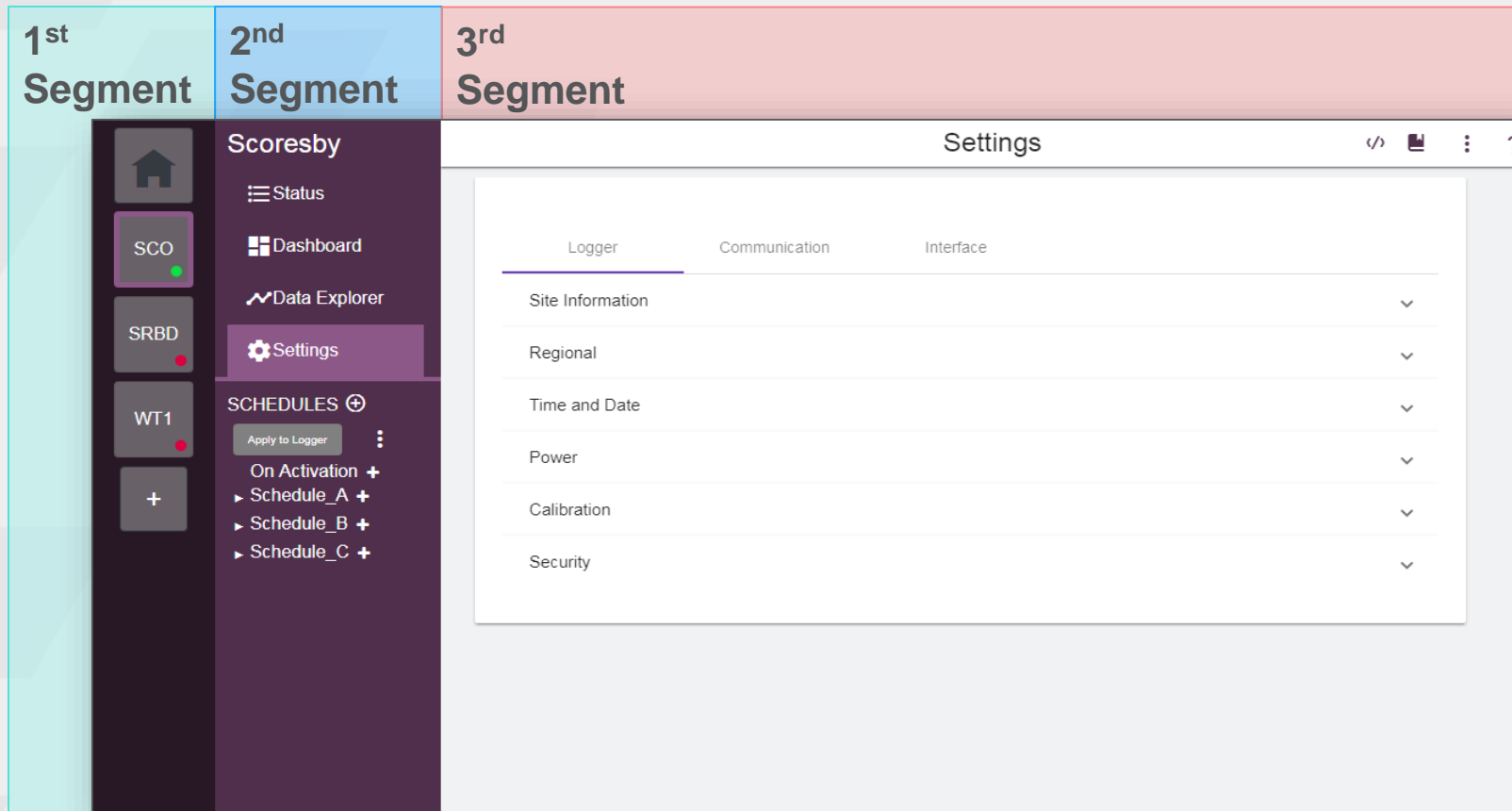


dEX 2.0 Introduction



- Compatible with previous dEX program
- New **improved UI design** to provide agility and flexibility to new or seasoned users
- Single 'centralized' page for accessing all registered loggers:
 - Each logger has individual access for programming and data display
 - Easy navigation from one logger to another via logger tab with connection indicator
 - Home button for displaying data from various loggers in the network
- **Template creation** for improving speed of scalability with porting configuration to different loggers

Tab Structure



1st Segment:

- Selecting home page or individual logger

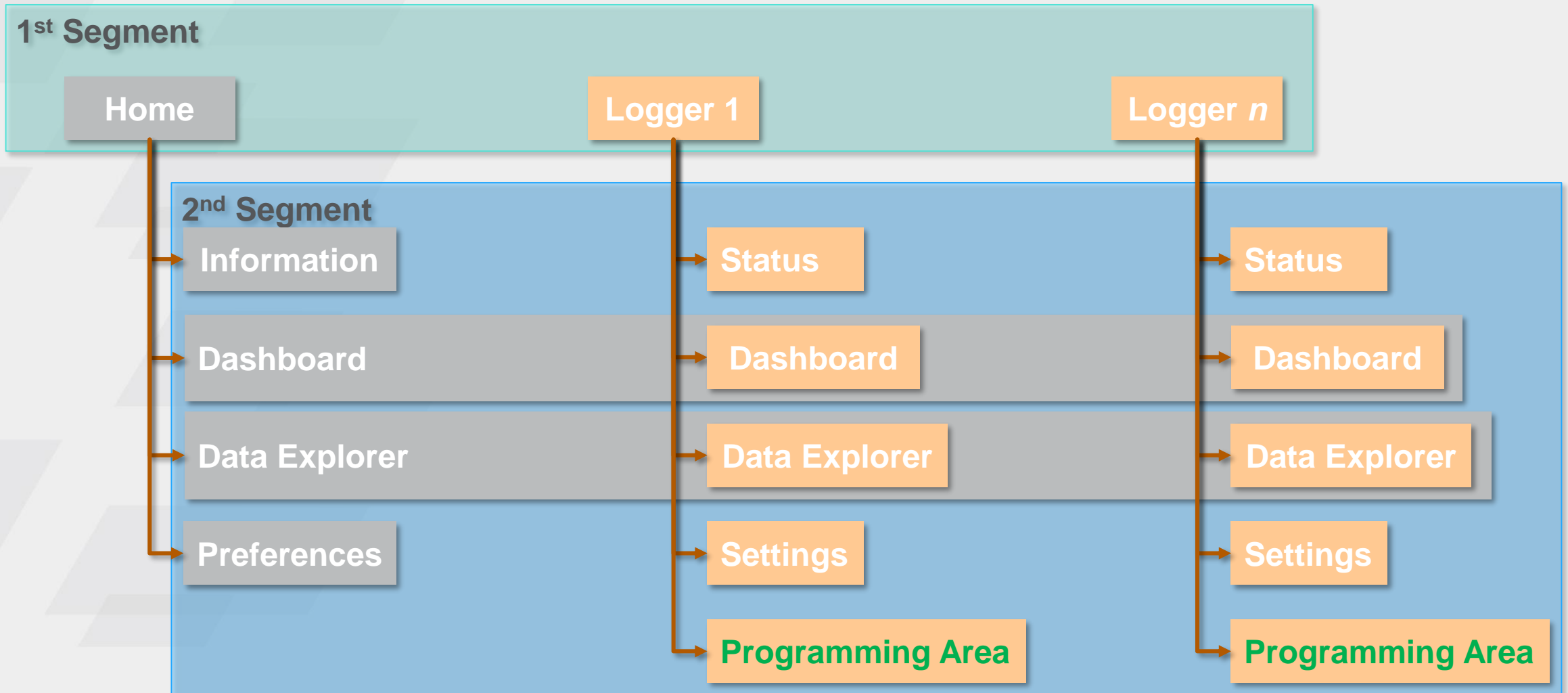
2nd Segment:

- Further options after selecting 1st column

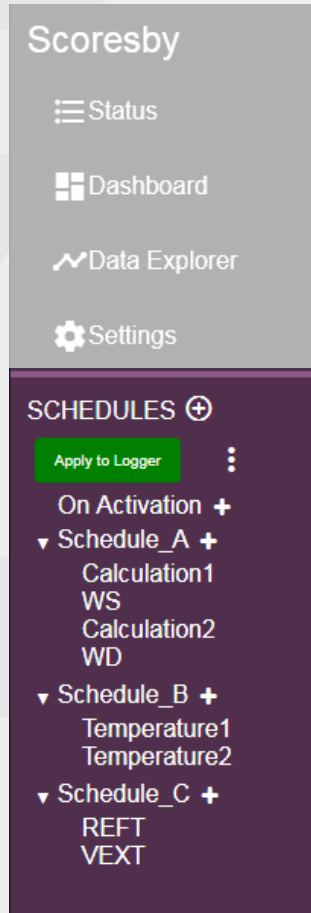
3rd Segment:

- Action area

Tab Structure - Continue



Programming Area



- Located on 2nd segment on every individual logger
- Only available when the logger is connected (status: green) or during creation of program template
- **Simplify button** on adding schedules/ channels and sending the program to the logger
- Using similar tree structure as previous dEX and retain channel functions such as move up/ down and duplicate
 - Move up/ down is limited within a schedule
- Located at the **same page** as Dashboard and Data Explorer
 - No need to switch back and forth between programming and data viewer

New Features – Data Viewer

Setting Wizard

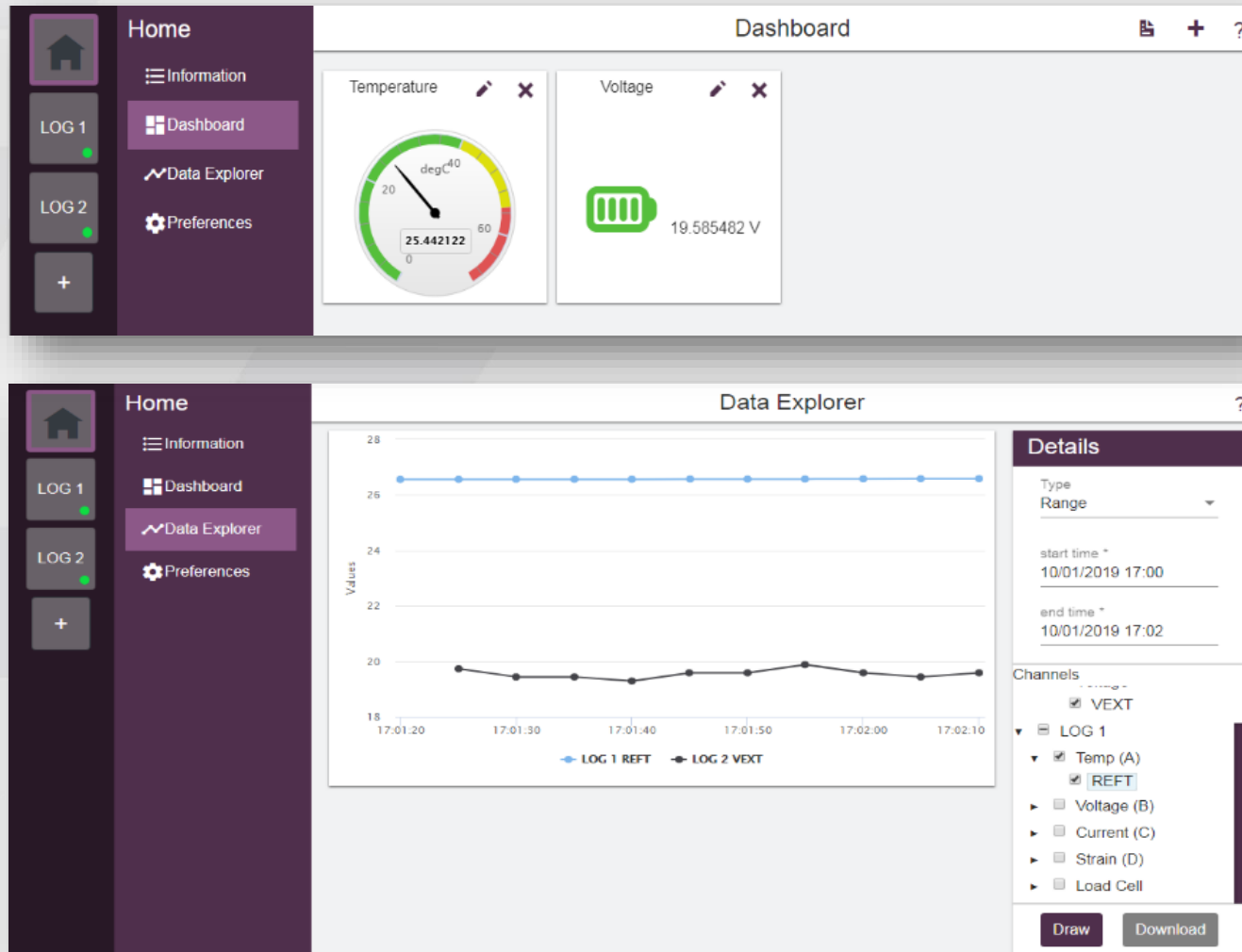
The screenshot shows a 'Setting Wizard' interface with seven steps: 1. Regional and ..., 2. Secu..., 3. Power, 4. Ether..., 5. Modem, 6. Wifi, and 7. Done. Step 1 is active and highlighted. The settings for Step 1 are as follows:

- Mains Frequency: other (dropdown), Hz: 100
- Temperature Units: °C Celsius (dropdown), Decimal Point Chart: Standard (,) (dropdown)
- Logger Timezone: UTC+00:00 GMT: UK, Portugal, West Africa (dropdown)
- Update using NTP: NO (dropdown)
- The computer's approximate time is: 2019-09-16 14:31:42
- The device's approximate time is: 2019-09-16 14:31:44
- Set logger's time: Match computer's time (dropdown)

At the bottom left is a 'Next' button, and at the bottom right is a 'Set on logger' button.

- Accessible from individual logger, when connection status is green
- **Separation** of profile configuration to the main program
 - Changing profile does not need changing program
- **Better assistance** to first time users
- Categorized and highlighted the default setting – new user does not necessarily change the setting

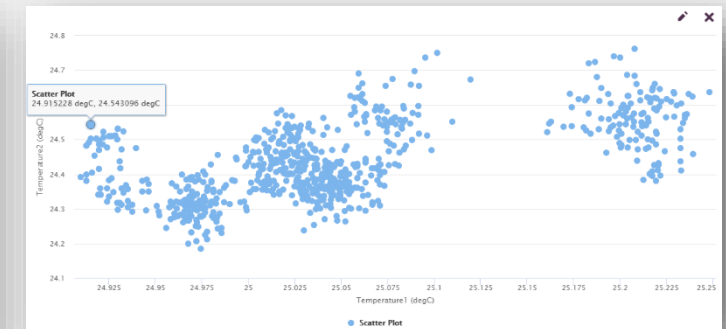
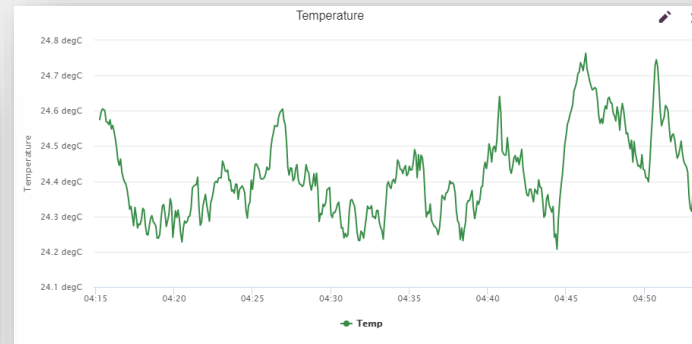
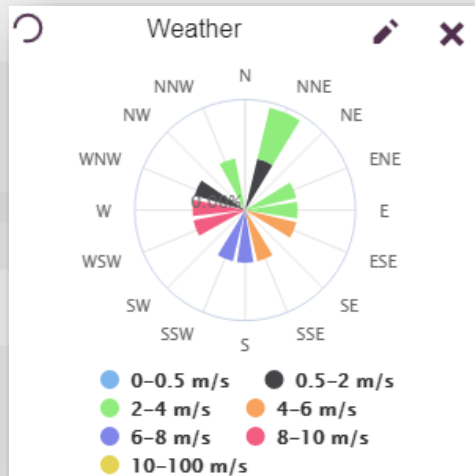
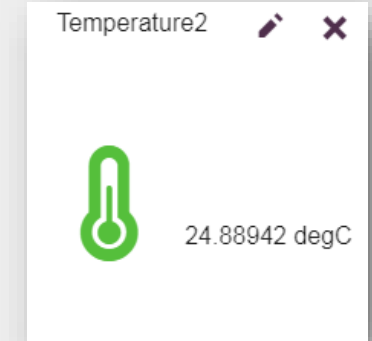
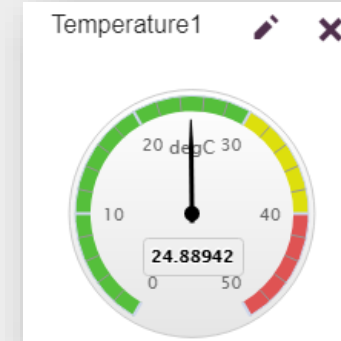
Home Page – One Page Views All



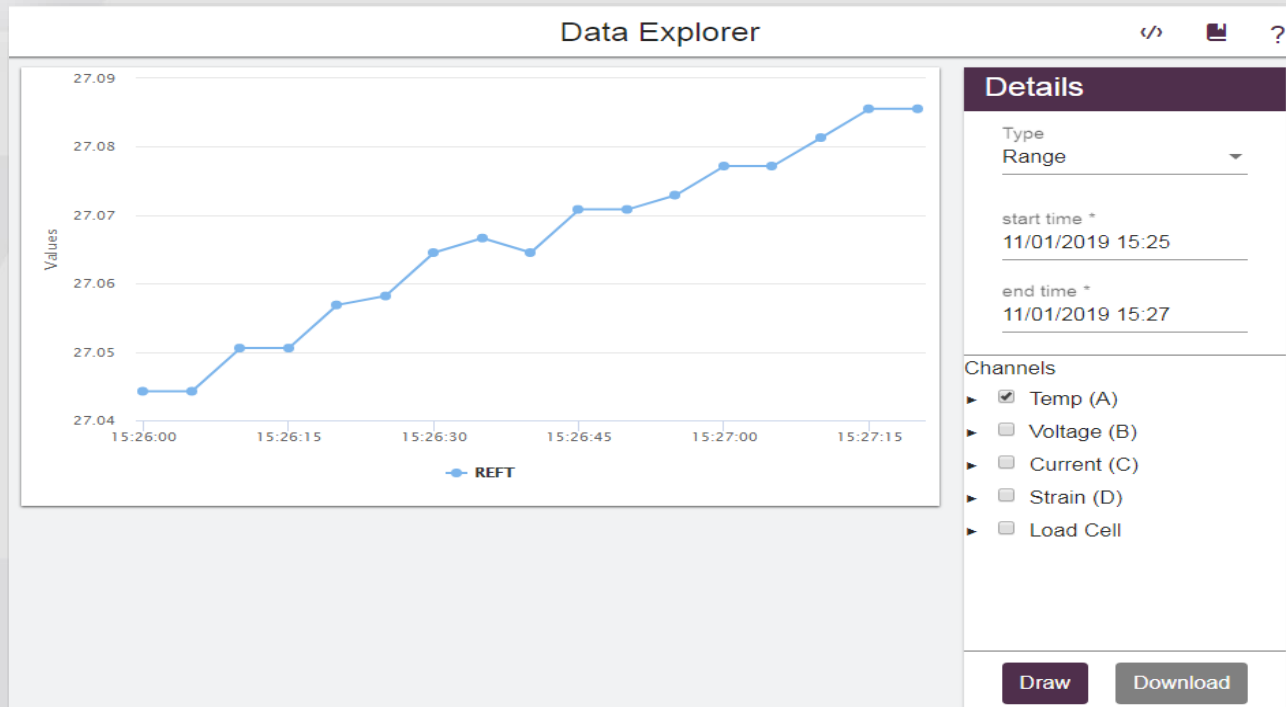
- Home Page can display or unload data from all registered loggers
 - Dashboard and Data Explorer Home version has **different function** compare to individual logger version
- Users may select specific data from different logger:
 - To be plotted next to or against each other
- User may change the language setting of dEX application

Dashboard – Real Time Viewers

- Dashboard for displaying real time data as **Widgets** (previously called Mimics)
- Selections:
 - Gauge
 - Digital Indicator with various icons
 - Chart (line, area, column) – value vs time
 - Scatter Plots – value1 vs value2
 - Wind rose



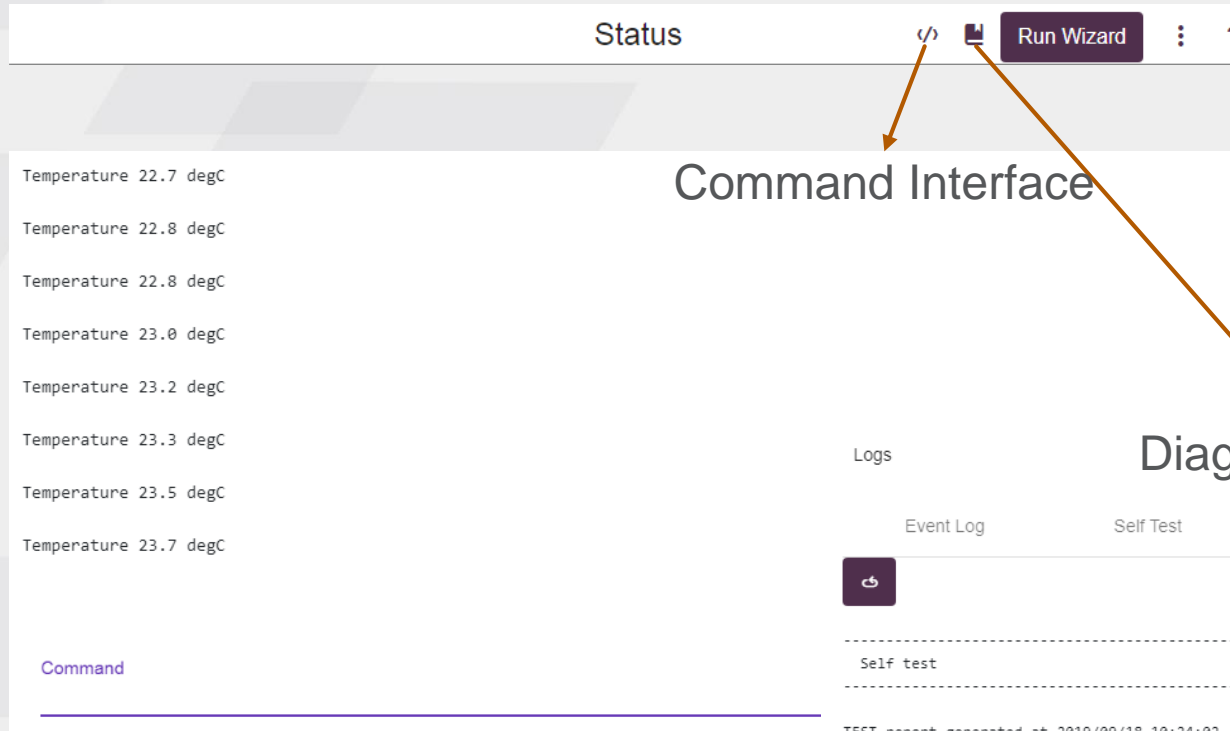
Data Explorer – Historical Viewers



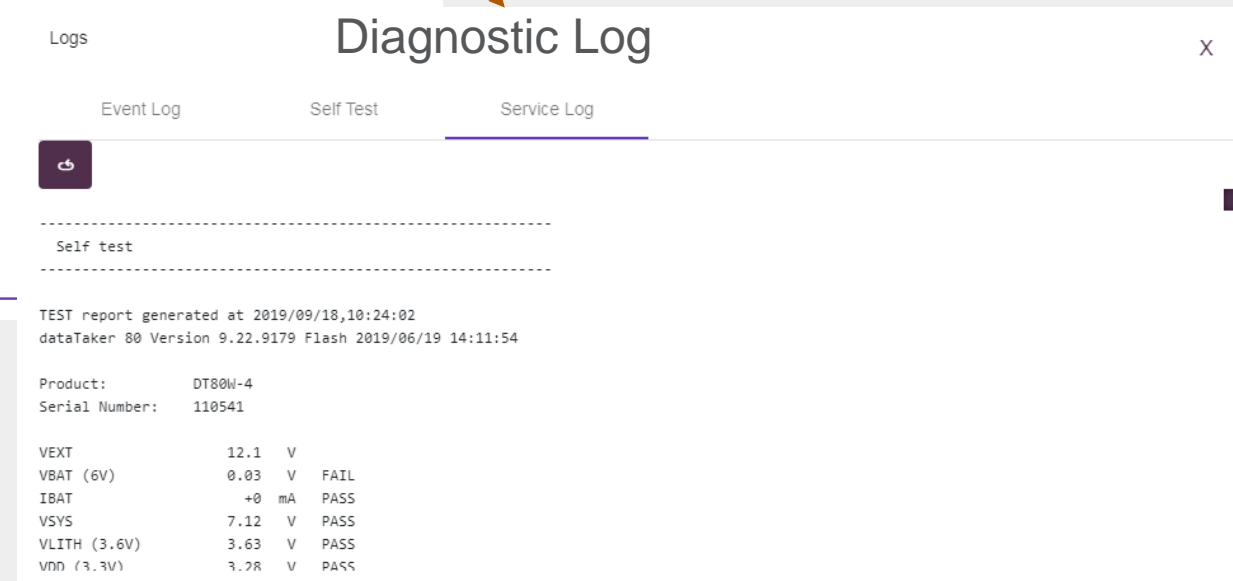
- Data Explorer for displaying or unloading all historical data or based on time frame setting
- Downloadable file as CSV or DBD format

New Features – Programming

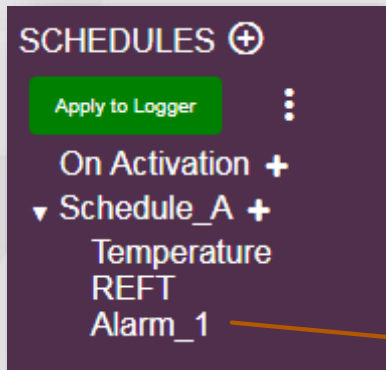
Function Relocation and Adjustment



- Command Interface & Diagnostic Report
 - Top right corner button
 - Accessible from any page
 - Only one line of command possible



Alarms – New Approach



- No longer part of a channel but **becoming a channel**
- The same approach to text programming rather than following the old dEX method
- Allow **multiple condition to be tested** with Boolean link (AND, OR, XOR)

- Multiple outputs are possible:
 - Text
 - Digital state, Relay, CV
 - Email
 - Command Trigger

A screenshot of the 'Alarm_1' configuration window. The window has a title bar with 'Alarm_1' and a 'Save' button. The main content area is divided into sections: 'CHANNEL', 'Alarm', 'Conditions', 'Repeat', 'Action Text', and 'Action'. The 'Conditions' section shows two conditions: 'Temperature > 25' and 'REFT > 30' connected by an 'OR' operator. The 'Repeat' section has a toggle switch labeled 'Repeat output if condition is still true (from the previous evaluation)'. The 'Action Text' section contains the text 'Event triggered on Logger ! at @ on #, ?N value is ?V ?U.'. The 'Action' section shows three actions: 'Digital Output 1', 'Relay Contact', and 'c: XB'. There are plus and minus buttons for adding and removing conditions and actions.

SDI12/ MODBUS – New Approach

- Single page channels creation
- Easier for parameter mapping

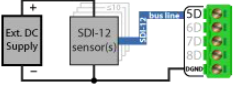
Add Channel 🔗 📄 Create

CHANNEL

General

Type
SDI-12

Wiring - independent, on bus 5D



Device Address
0 (0-9,a-z,A-Z)

☐ Continuous Mode

Version
Automatic

Add Entry

Channel Name	Unit	Register Set	Register Index	Remove
WS	m/s	1	2	X
WD	deg	1	5	X
Temperature	degC	2	1	X
Humidity	%	2	3	X
Pressure	mbar	2	4	X

SCHEDULES +

Apply to Logger

On Activation +

▼ Schedule_A +

Temperature
REFT
WS
WD
Temperature
Humidity
Pressure

Add Channel 🔗 📄 Create

CHANNEL

General

Type
Modbus

Input
Serial Sensor Port

Address
1

Timeout
0 seconds

Retries
1

Add Register

Name	Unit	Operation	Register	Data Type	Remove
WS	m/w	Holding Register ▼	5001	32 Bit Float Straight Endian	
WD	deg	Holding Register ▼	5003	32 Bit Float Straight Endian	X
Temperature	degC	Holding Register ▼	5005	32 Bit Float Straight Endian	X
Humidity	%	Holding Register ▼	5013	32 Bit Float Straight Endian	X
Pressure	hPa	Holding Register ▼	5017	32 Bit Float Straight Endian	X

SCHEDULES +

Apply to Logger

On Activation +

▼ Schedule_A +

Temperature
REFT
WS
WD
Temperature
Humidity
Pressure

Channel Hidden Options

ADVANCED

STATISTICS

ADVANCED

General

☒ Log and display this value

Channel Variable
1001

Assign to Channel Variable
CV = value

Input Range
Auto range (30mV to 3V)

Extra Samples
0

Measurement Delay
10 Milliseconds

Data Manipulation
None

☐ Use cold junction reference for subsequent thermocouple measurements

Excitation
2.5 mA

Resistance Value at 0 degC
100

Scaling
Scaling
No Scaling

Manage Scaling

STATISTICS

General

☒ Average

☒ Minimum

☒ Maximum

☒ Standard deviation

☒ Number

☒ Integral

☒ Time of minimum

☒ Time of maximum

- Advanced and Statistic options **remain hidden** (not displayed)
- Some channels have different Advanced option
- Without these hidden option, user may still run any measurement.
- Only for advance users



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Thank you



instrumentos
de medida

SEPTIEMBRE, 31 28022 MADRID
TEL. 913000191

www.idm-instrumentos.es
idm@idm-instrumentos.es