



| Date, Time | T1, % | T2, °C | T3, °C |
|---------------------|-------|--------|--------|
| 2023-09-23 12:00:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:05:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:10:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:15:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:20:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:25:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:30:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:35:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:40:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:45:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:50:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 12:55:00 | 53.0 | 22.9 | 23.2 |
| 2023-09-23 13:00:00 | 53.0 | 22.9 | 23.2 |

LOCAL WEB is a WEB HMI SCADA application for devices, which use Embedded Linux operating system. SCADA (Supervisory Control And Data Acquisition) is software application, what is designed for real time operating to collect, display and archive information related on monitoring and controlling objects. WEB HMI (Human-Machine Interface) is net interface, based on standard markup web languages using to display in web browsers, what allows a user to interact with system control.

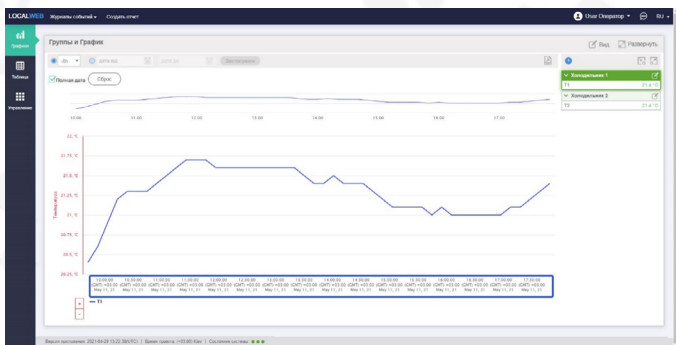
LOCAL WEB application is developed and supported by TERA since 2017. In development it's implemented contemporary technologies such as Embedded Linux (Kernel 4.x), NGINX, NodeJS, AngularJS, WebSocket, Microservice IPC, JSON, SQL Data Base. **LOCAL WEB** is installed on CS10600 Datalogger with Embedded Linux operating system, and it uses only its CPU and memory. There is no needings to instal this application on user's devices, no third party apps or cloud servers.

| Role | Permissions | Edit | Del |
|--------------------|---|------|-----|
| Administrator | Users, Roles, Equipment project, Notification settings, Project configuration, Project settings, Network settings, List of values, Event investigation catalog, Technologic log, System log, User's events log, Custom events, Table of devices ranges and thresholds, Programmable logic, Groups, Network schemes, Report, Digital signature | ✎ | 🗑️ |
| Operator | Notification log, Groups, Report | ✎ | 🗑️ |
| New Group Operator | Network settings, List of values, Event investigation catalog, Technologic log, System log, User's events log, Custom events, Programmable logic, Groups, Report | ✎ | 🗑️ |
| New Group Manager | Users, Roles, Notification settings, Project settings, Technologic log, User's events log, Programmable logic, Groups, Report, Digital signature | ✎ | 🗑️ |

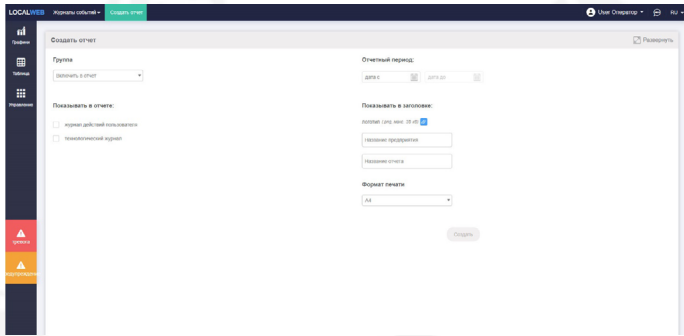
| Approved | Name | Username |
|---------------------|---|----------|
| 2023-09-23 12:00:00 | User admin is logged in | admin |
| 2023-09-23 12:05:00 | User User is logged out | User |
| 2023-09-23 12:10:00 | User User is logged out | User |
| 2023-09-23 12:15:00 | User User is logged in | User |
| 2023-09-23 12:20:00 | User Alex is logged in | Alex |
| 2023-09-23 12:25:00 | User Alex is logged in | Alex |
| 2023-09-23 12:30:00 | User admin is logged out | admin |
| 2023-09-23 12:35:00 | User admin is logged out | admin |
| 2023-09-23 12:40:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 12:45:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 12:50:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 12:55:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:00:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:05:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:10:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:15:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:20:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:25:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |
| 2023-09-23 13:30:00 | Permission changed for role 'New Group Manager' resource 'notification log' action 'view' set to 'full' | admin |

LOCAL WEB application operates with wired transducers (Ethernet or RS485 interface) and wireless transducers (WiFi, ZigBee 2,4 GHz and 868 MHz, Bluetooth, etc.). It supports the work with several users simultaneously, that allows to monitor and to control the process using any PC, tablet or smartphone connected to Internet. For data operating the user needs just to follow the link in Chrome browser and input login/password on the server, that's needed to be put under control. **LOCAL WEB** offers the flexible system of assignment user's rights, that's setting up by an administrator in advance. It allows to divide users on the various of groups with own credentials and roles: an administrator, an operator, a user, etc. Depends on rights, user is allowed to view and change certain data and projects.

The application creates a certain project for specific technological process, data receiving and control. Each certain project keeps its data, configurations, preferences for displaying and controlling. Online data received from devices within one project is available to group by common features. By the group it generates charts, reports, tables. Also it allows to determine alarm signalization range.



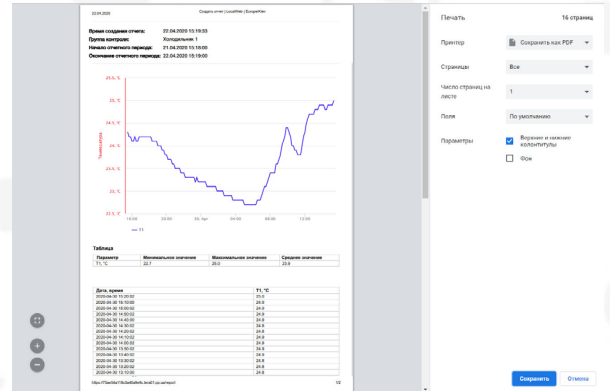
| Дата | Имя файла | Состояние |
|---------------------|--|-----------|
| 2023-09-23 12:00:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:05:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:10:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:15:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:20:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:25:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:30:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:35:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:40:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:45:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:50:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 12:55:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:00:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:05:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:10:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:15:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:20:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:25:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |
| 2023-09-23 13:30:00 | "Администратор" [ROLE] "notification log" [RESOURCE] "view" [ACTION] "full" [PERMISSION] | OK |



LOCAL WEB allows the user to control devices remotely at real time, to display archived data, to generate charts, tables, reports for certain time period, to export data in PDF file. In the charts it's available to scale by X and Y axis, to add/remove additional axis, to change color, line appearance, etc. On the detailed chart the user may attach a chosen option or its group. Over main part of detailed chart there is the widget called time line with trend preview. This widget allows the user quickly and intuitively to define necessary time period for generating detailed chart. Besides of chart visualization, the user may view archived data in the table within certain time period.

Also in LOCAL WEB there is implemented the flexible system of preferences for alarm signalization. It allows to set up the range of alarm detecting, as well as to choose the users for alarm notification via messengers. The data and its groups indication change the color online depending on presence device connection, standing at normal, pre-alarm or alarm state. In addition the operator, staying online, views blinking alarm icon at the left-hand part of a screen. It stops blinking after the operator approves it.

| Время | Система | Название | Тип | Комментарий | Имя пользователя |
|---------------------|---------|--------------------------------|----------------|-------------|------------------|
| 2023-05-11 12:43:38 | T17 | проблема в датчике температуры | Предупреждение | | ТЕНА |
| 2023-05-11 12:47:07 | T17 | выявлено нарушение | Тревога | | ТЕНА |



The system keeps a technological log and a user's action log. The technological log keeps all of alarm and errors in the technological devices. Also it keeps user's action for current alarm: when and who approves it. The action log keeps preferences changes and configurations of LOCAL WEB, projects, groups and data, that was acting by a certain user in certain time.

LOCAL WEB has possibility to generate mnemonic scheme of the technological process as widgets with active parts. Widget allows to visualize the real time process of control. These widgets are options, that generates with a customer order for certain technological process.