

LS SmartConnect Concept

LS SmartConnect is the concept that connects products to the internet - giving the opportunity of monitoring, servicing and controlling only using PC tools or even an App.

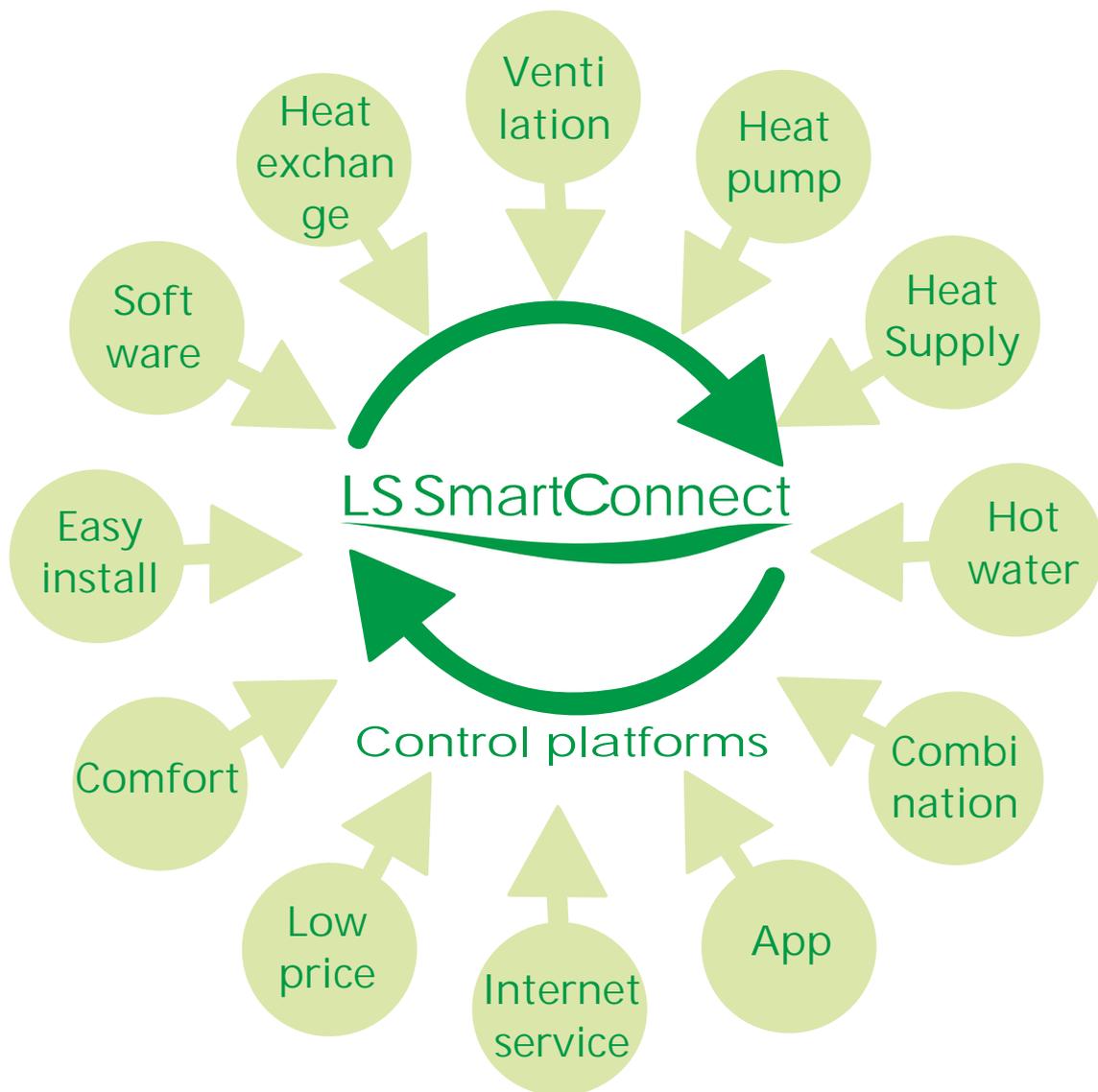


Table of Content

Describing the Concept	3
LS SmartConnect ES 2020 Platform	4
LS SmartConnect Configuration Center	5
LS SmartConnect GateWay	6
LS SmartConnect LOG	7
LS SmartConnect Center	8
LS SmartConnect App	9
Hardware Accessories - Operating Panels	10
Hardware Accessories - Wall Sensors, Build-in Sensors	11

Describing the Concept

The LS SmartConnect concept includes hardware for new and existing products. It also includes software for programming the LS SmartConnect ES 2020 Platform - the very versatile controller for new products. Furthermore, the LS SmartConnect concept holds software for monitoring, servicing and adjusting the finished product solution over the internet by use of a PC or an App on a smart phone or tablet.

Also, the LS SmartConnect GateWay is part of the LS SmartConnect concept. The LS SmartConnect GateWay provides the option of getting existing products, which use ModBus interface, on the internet, opening the opportunity of using the SmartConnect Log, Center and App.

All components of the LS SmartConnect concept are tied together by the LS SmartConnect Server. To ensure the internet security for SmartConnect all hardware products in the SmartConnect series have the Nabto middleware integrated. Nabto provides a secure connection between the user's phone/tablet and the SmartConnect product, using industry standard cryptography. Each product is given a unique device-id which is used by the client to reach it, regardless of dynamic IP addresses. The Nabto middleware provides seamless, direct remote access without firewall or router configurations. The direct Nabto connection ensures the best possible performance with minimal overhead and latency. Also note, all data are kept within the product, the Nabto middleware performs a PIR to PIR bridge enabling the data to be displayed remotely. All in all making the SmartConnect solution a very safe IoT solution.

This brochure gives a short introduction to the individual components of the LS SmartConnect concept, to get into details of the specific components and how it may be used in a specific product solution, please do not hesitate to contact us.

LS SmartConnect ES 2020 Platform



The LS SmartConnect ES 2020 Platform (ES 2020 for short) is a very versatile platform where all input and output connections may be configured and all functions customized and adjusted using the configuration tool **LS SmartConnect Config**. Also it is an open platform making it possible for customers to even change the software code themselves, if they wish to.

Hence, the ES 2020 is open, you may program it for numerous different applications, customizing your product to meet exactly your specific requirements, to make your product unique.

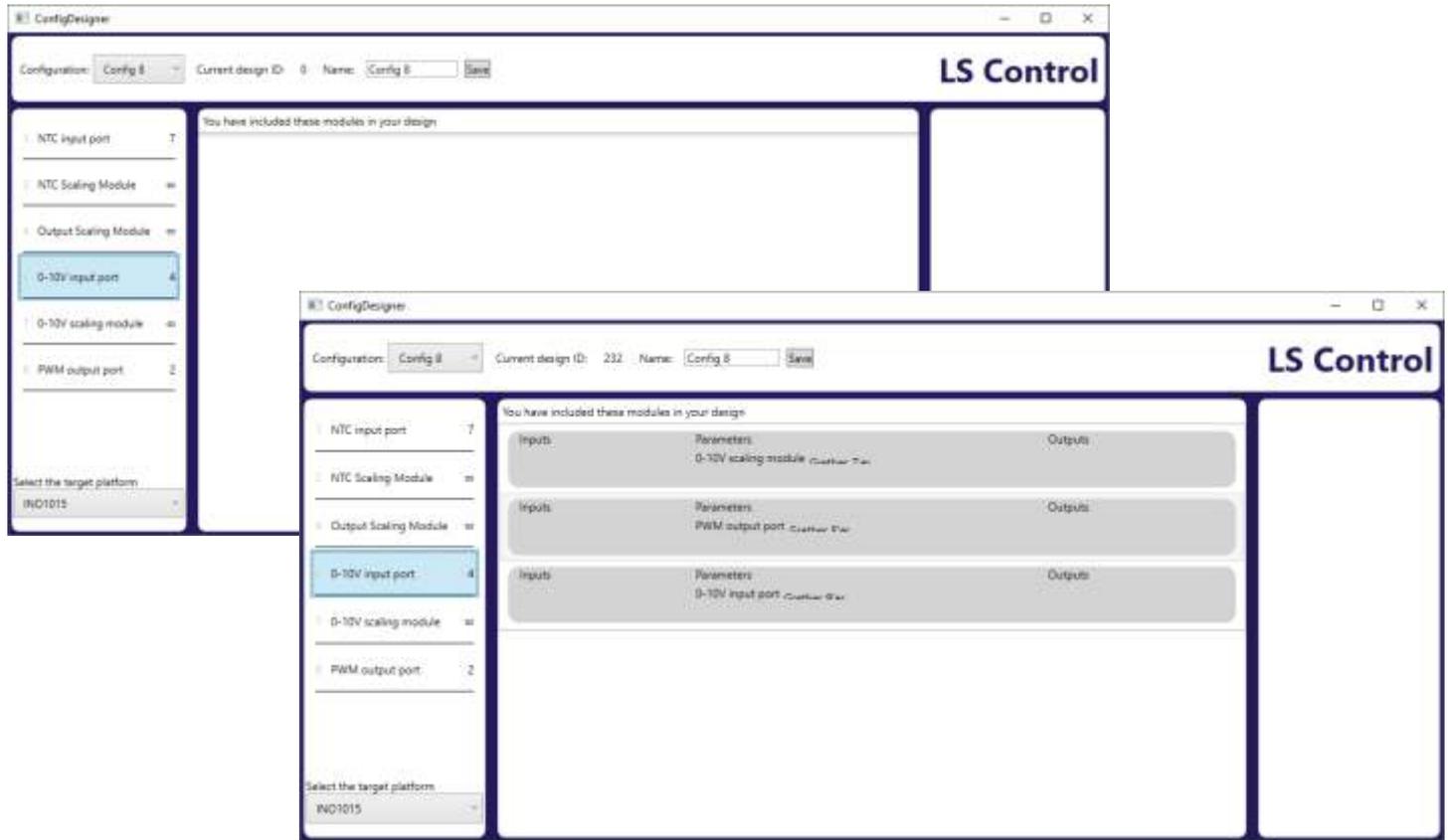
However, If you do not want to program and adapt the ES 2020 yourself, we still offer to do the programming, to customize the ES 2020 to your specific requirements.

The SmartConnect ES 2020 Platform is more than "just" a controller. It has integrated LAN access ensuring your possibilities for getting your equipment on the internet - which is the nerve in the LS SmartConnect concept.

Due to the integrated LAN access and Nabto middleware, the ES 2020 grants you the opportunity of getting your finished product safely on the internet, opening the possibilities of using the SmartConnect Center and Log providing a very unique and future-proof tool, to give your customers the best possible experience and a highly reliable service system.

Furthermore having your product on the internet also gives the opportunity of giving your customers/users the benefit of monitoring and controlling the product by an app on their PC, smart phone or tablet.

LS SmartConnect Configuration Center



LS SmartConnect Configuration Center is a configuration tool for the ES 2020 Platform. The configuration tool gives the possibility of customizing numerous input and output options, choosing functionality and for the advanced programmers, it is even possible to change the code.

This tool is merely a development tool enabling our customers to quickly configure the hardware platform controller to be obtained in solution applications without the need of the LS Control development department.

LS SmartConnect GateWays

The Gateways from LS Control are developed to make it possible to get existing equipment on the internet, which makes it possible to monitor and control it using PC-tools and apps.

They are all ModBus to LAN translators.

All LS SmartConnect GateWays are supplied with a license for the middleware Nabto to ensure a secure connection between equipment and app/PC.

Also all gateways have a flash memory of 32MB storing up to 128 data entries each 2 minutes for 146 days, enabling the LS SmartConnect Log to provide a graphical overview of the product performance and giving the opportunity of setting and adjusting the ModBus values.



LS SmartConnect GateWay

This gateway is an external gateway with enclosure for use with products with existing controllers using ModBus.

The gateway must be provided with specific profile for the specific ModBus protocols to be translated. This ModBus to LAN translation profile to the gateway must be made in close cooperation between customer and LS Control.



LS SmartConnect Mini GateWay

This gateway is a build-in product without enclosure and is to be integrated in products with existing controllers using ModBus.

This gateway does not hold any customer specific software within the product as all the translation is performed via the cloud server.



LS SmartConnect WiFi GateWay

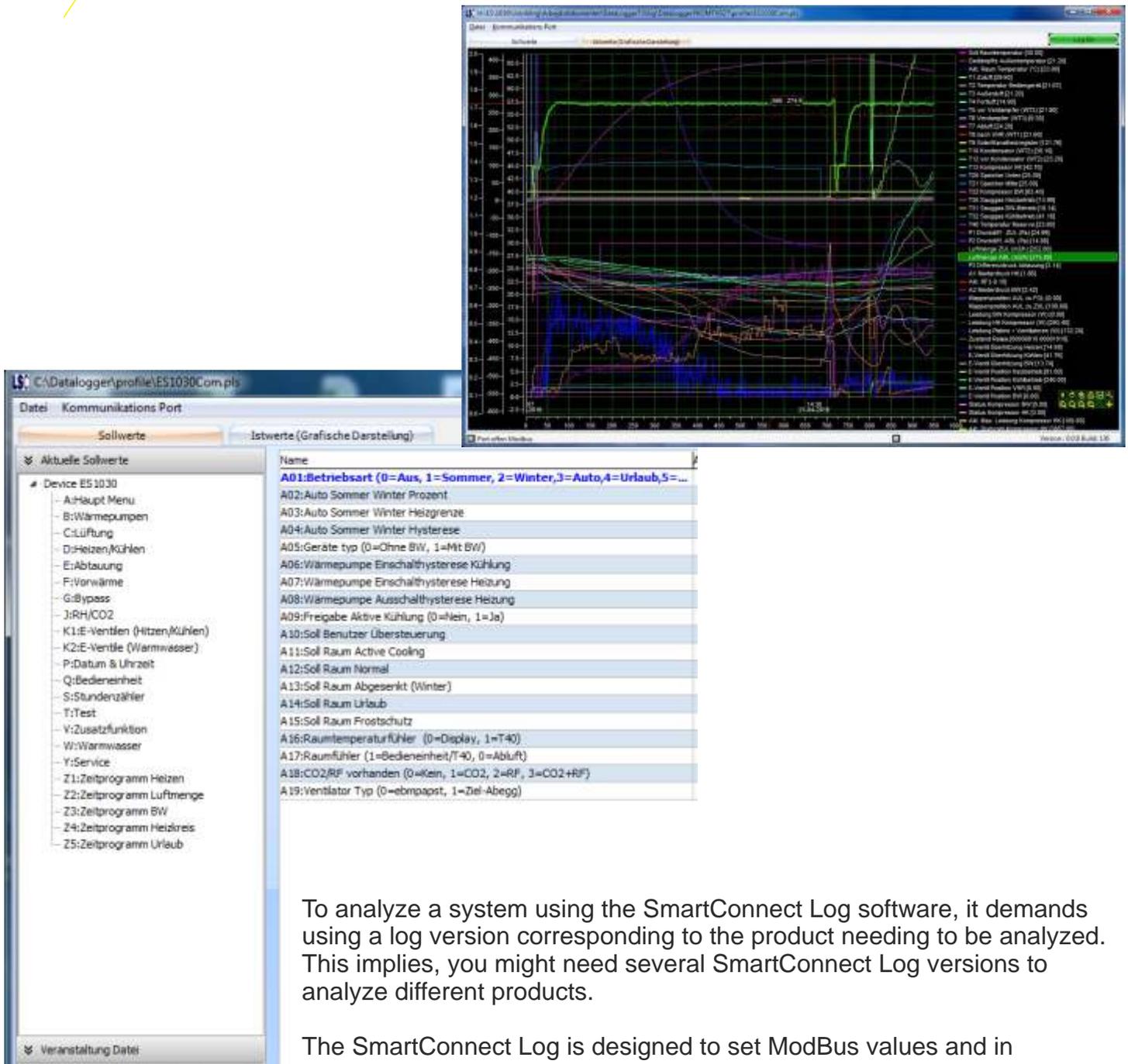
Like the LS SmartConnect Mini GateWay this gateway is a build-in product without enclosure and is to be integrated in products with existing controllers using ModBus.

The LS SmartConnect WiFi Gateway does not require wired LAN access but is connected to the internet via the internet WiFi router of the house/building.

LS SmartConnect Log

The SmartConnect Log software is a technicians tool for accessing a ventilation system, heat pump etc., which is connected to our server via the internet. Or it can be accessed locally by using the usb-port of a PC.

The SmartConnect Log provides a graphical overview of e.g. the heat pump / ventilation system performance and the possibilities of setting and adjusting the ModBus values to improve the overall performance.



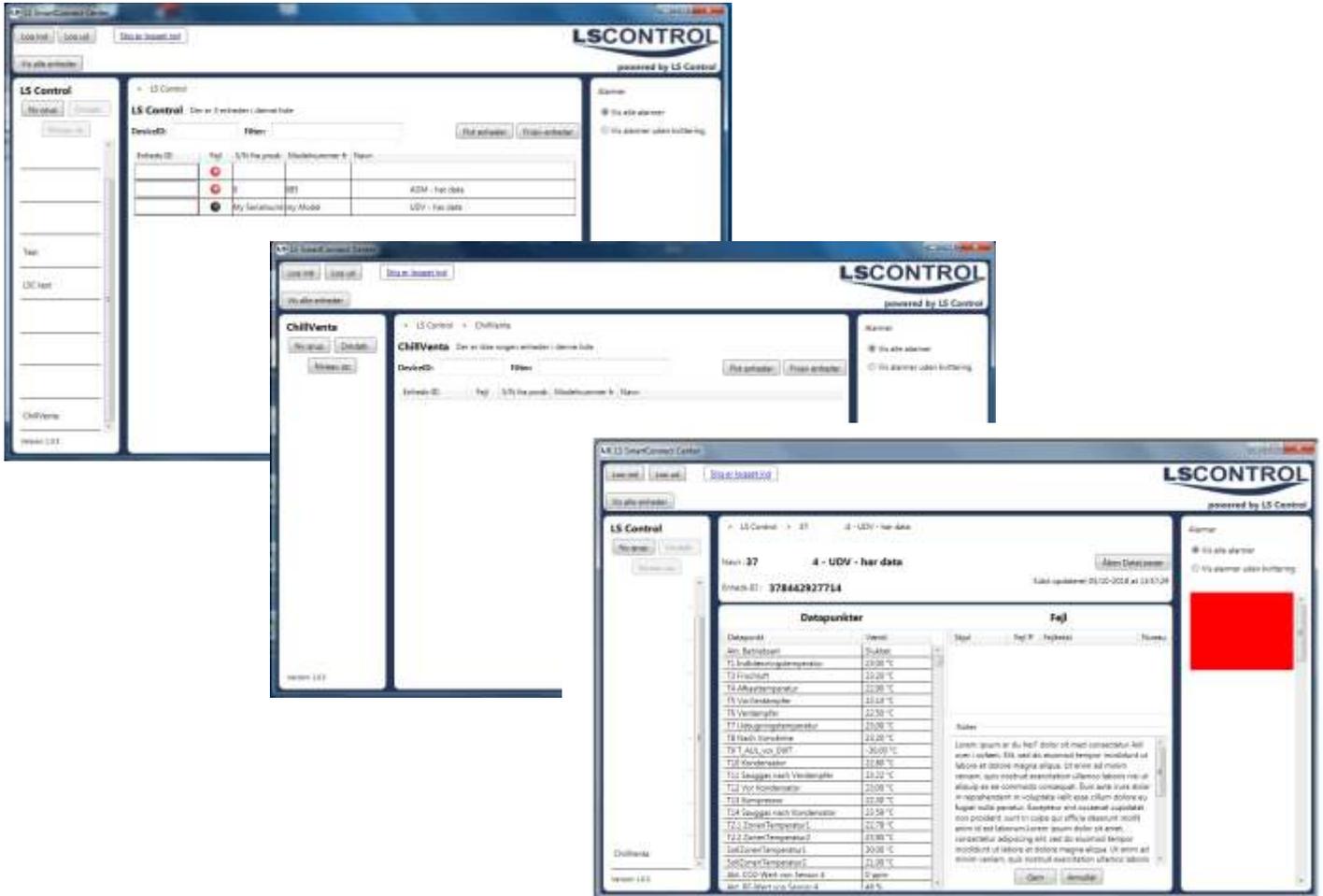
To analyze a system using the SmartConnect Log software, it demands using a log version corresponding to the product needing to be analyzed. This implies, you might need several SmartConnect Log versions to analyze different products.

The SmartConnect Log is designed to set ModBus values and in advanced SmartConnect Log systems the actual operation can be monitored.

LS SmartConnect Center

The SmartConnect Center is a PC tool for monitoring several units at the same time.

This monitoring software tool includes the possibility of assigning access to a certain level. E.g. a manufacturer buys a SuperUser License giving access to all the Manufacturers products connected to the internet. The manufacturer then has the opportunity of resell sub-licenses for service companies or retailers.



The LS SmartConnect Center monitors all the manufacturers customers connected units. Errors / Status are simultaneously displayed for all connected units, but only visible on licensed levels, giving each level access to exactly the units needed to service and monitor a specific customer group.

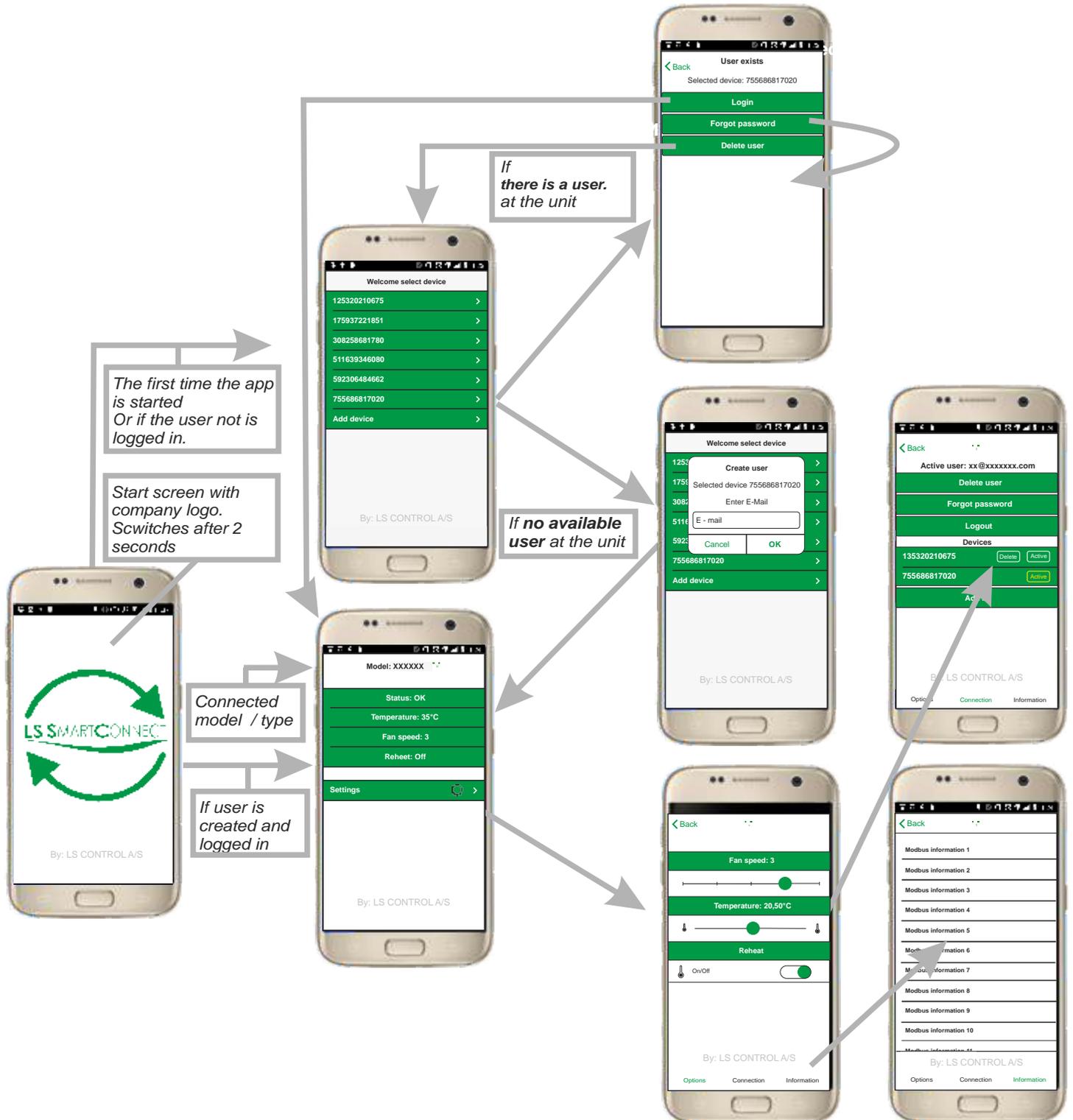
Naturally the superuser level has access to monitor and service to all connected units belonging to that superuser / manufacturer.

This tool saves the engineers numerous field trips to the customers, as a lot of service and updates can be performed remote.

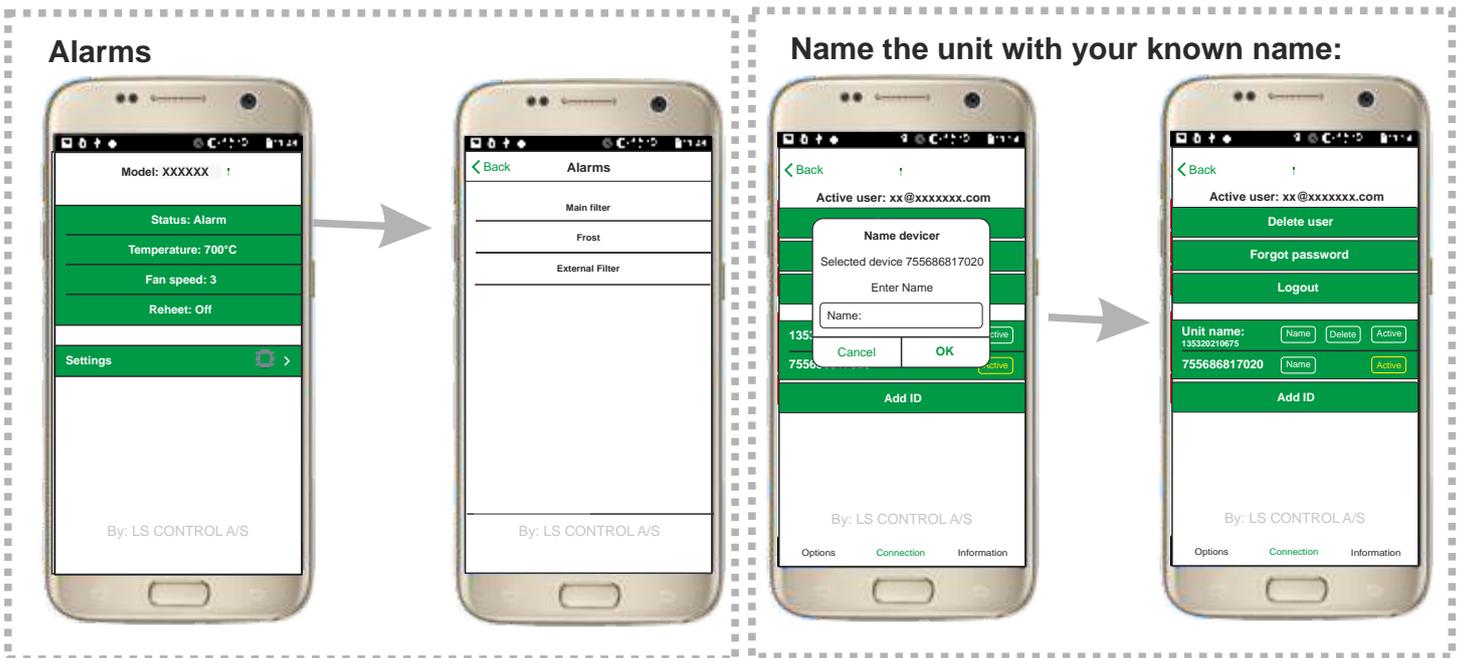
LS SmartConnect App

The LS SmartConnect App is an application for Smartphones and tablets for the end-user to operate e.g. his heat pump or ventilation system over the internet (IoT).

The App is developed for both iOS and Android and naturally it only works as an accessory to products with LAN access, such as the LS SmartConnect ES 2020 Platform.



First, an example of alarms in case the unit has a malfunction. Secondly, an example of the option to give each unit a name e.g. home and cottage or what ever the customer likes.



Hardware Accessories - Operating Panels

Operating Panels



Simple push button operating display with 4 push buttons, LEDs and USB connection for connecting a PC to monitor operation and perform service updates / maintenance of the software system.



Operating display with capacitive screen. Also featuring ModBus, USB and SD-card for connecting a PC to monitor operation and perform service updates / maintenance of the software system.

Hardware Accessories - Wall Sensors, Build-in Sensors

Room Sensors for Wall Mounting



Wireless Sensors

Available as combination sensor for Temperature °C and Humidity RH% or Temperature °C / Humidity RH% / Co₂ or Temperature °C / Humidity RH% / VOC.



ModBus Sensors

Available for Humidity RH% and as combination sensor Co₂/ Temperature °C / Humidity RH%.



0-10V Sensors

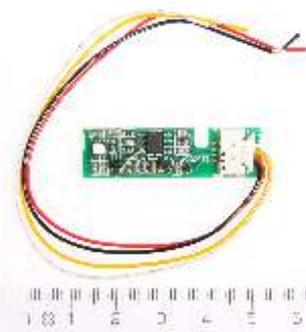
Available for Co₂, Humidity RH%, Temperature °C and as combination sensors Co₂ / Temperature °C or Temperature °C / Humidity RH%.



NTC 10K Sensors



PT 1000 Sensor



Humidity Sensor

For more options, do not hesitate to contact us

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