

ES800 Premium Line System**ES801.1 / ES801.1-S / ES820.1 / ES830.1 / ES850.1 / ES882.1 / ES886.1 / ES886.2 / ES891.1 / ES892.1****SAFETY ADVICE** (English)

Warning! It is critical that you read and follow this safety advice, the product description including technical data and the associated technical documentation, which are facilitated on and to be downloaded from ETAS website, www.etas.com (via Direct Product Access/select Product). Do not use the product if you cannot read and/or understand the Information for safe operation. If you do have questions for safe operation, please contact the ETAS hotline in your region www.etas.com/hotlines.

With this ETAS product, you can influence safety-relevant systems or data, e.g. in automobiles, automobile components and test benches. Improper use and unskilled application without adequate instruction and experience in handling of such products may cause threats to life and physical conditions as well as damages to property.

Our products have been developed and released exclusively for use in applications defined in the product description.

Fitness and suitability of the products for any intended use beyond the utilization for which the products have been released (e.g. different stresses/strains or technical conditions) need to be verified by the user on own authority by taking appropriate actions and measures (e.g. by means of tests).

- ETAS products made available as **beta versions** of firmware, hardware and software are to be used exclusively in testing and evaluation. These products may have not sufficient technical documentation and not fulfill all requirements regarding quality and accuracy for market released series products. Therefore product performance may differ from the product description and your expectations. The product should be used only in controlled test environments. Do not use data and results from **beta versions** without prior and separate verification and validation and do not pass them to third parties without prior examination.
- Do not use this product if you do not have proper experience and training in using the product.
- To allow proper handling of ETAS products ETAS has released Known Issue Reports (KIR) on its website. Known Issue Reports provide information on known product problems of substantial relevance, including their technical impact, and give instructions on available solutions. Prior to the initial operation of the product you are required to verify whether a KIR is available for the current product version and adhere to available information in the KIR. Known Issue Reports can be found on ETAS website www.etas.com/kir (Password in KIR area: KETASIR).
- Program code and/or control actions of programs, which have been developed or modified as well as data of any kind, which have been identified by using ETAS products, will need to be verified with respect to reliability, quality and suitability prior to any use or dissemination.
- When using this product with systems which accomplish safety functions (e.g. in automobiles, automobile components and test facilities), that influence system behaviour and can affect the safe operation of the system, you must ensure that the system can be transitioned to a safe condition (e.g. emergency shutdown or emergency operation mode) if a malfunction or hazardous incident should occur.
- All applicable regulations and statutes regarding operation must be strictly followed when using this product.
- Use of this ETAS product or any program code, program control procedures in the public domain (e.g. on public roads) should not occur unless they have been tested and verified as being safe in advance. It is therefore recommended to use the products only in closed and designated test environment.



The User Guide must be read prior to the startup of the product!

Requirements for users and duties for operators

The product may be assembled, operated and maintained only if you have the necessary qualification and experience for this product. Incorrect operation or operation by users without sufficient qualification may lead to injuries or death or property damages.

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The existing regulations for safety at work and accident prevention must be followed. All applicable regulations and statutes regarding operation must be strictly followed when using this product.

Intended useApplication area of the product

This product was developed and approved for applications in the automotive sector. The module is suitable for use in interiors, in the passenger cell or in the trunk of vehicles. For use in other application areas, please contact your ETAS contact partner.

Requirements for the technical state of the product

The product is designed in accordance with state-of-the-art technology and recognized safety rules. The product may be operated only in a technically flawless condition and according to the intended purpose and with regard to safety and dangers as stated in the respective product documentation. If the product is not used according to its intended purpose, the protection of the product may be impaired.

Requirements for operation

- Use the product only according to the specifications in the corresponding User Guide. With any deviating operation, the product safety is no longer ensured.
- Operate the modules of the system only with protective flap closed!
- Observe the requirements on the ambient conditions.
- Do not use the product in a wet or damp environment.
- Do not use the product in potentially explosive atmospheres.

Electrical safety and power supply

- Observe the regulations applicable at the operating location concerning electrical safety as well as the laws and regulations concerning work safety!
- Connect only current circuits with safety extra-low voltage in accordance with EN 61140 (degree of protection III) to the connections of the module.
- Ensure that the connection and setting values are being followed (see the information in the chapter "Technical data").
- Do not apply any voltages to the connections of the module that do not correspond to the specifications of the respective connection.

Power supply

- The power supply for the product must be safely disconnected from the supply voltage. For example, use a car battery or a suitable lab power supply.
- Use only lab power supplies with double protection to the supply network (with double insulation/reinforced insulation (DI/ RI)).
- The lab power supply must be approved for an operating altitude of 5000 m and for an ambient temperature of up to 70 °C.
- In regular operation of the modules as well as very long standby operation, a discharge of the vehicle battery is possible.

Connection to the power supply

- The connection of the modules to the vehicle battery or the lab power supply may be performed only with a module approved for the power supply of the ES800 product family (e.g. ES801.1). A direct connection without power supply module is not allowed.
- The power cable must not be connected directly to the vehicle battery or lab power supply, but via a fuse of up to 30 A.
- Ensure that the connections of the power supply are easily accessible!
- Route the power cable in such a way that it is protected against abrasion, damages, deformation and kinking. Do not place any objects on the power cable!

**DANGER!**

Dangerous electrical voltage!

Connect the power cord only with a suitable vehicle battery or with a suitable lab power supply! The connection to power outlets is not allowed!

To prevent an inadvertent insertion in power outlets, ETAS recommends to equip the power cords with safety banana plugs in areas with power outlets.

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The module does not have an operating voltage switch. The module can be de-energized as follows:

- Disconnect the cables from the signal connections
- and
- Disconnect the module from the power supply
 - Switching off the lab power supply or
 - Disconnecting the base module from the lab power supply (the lab plug is the isolating device) or
 - Disconnecting the base module from the vehicle battery (the lab plug is the isolating device) or
 - Disconnect the vehicle battery.

Approved cables

- Use exclusively ETAS cables at the Lemo connections of the module!
- Adhere to the maximum permissible cable lengths!
- Do not use damaged cables! Cables may be repaired only by ETAS!
- Never apply force to insert a plug into a socket. Ensure that there is no contamination in and on the connection, that the plug fits the socket, and that you correctly aligned the plugs with the connection.

Requirements for the place of installation

- Position the module or the module stack on a smooth, level and solid underground.
- The module or the module stack may be sloped by no more than 15°.
- The module or the module stack must always be securely fastened.

Securing the modules

Risk of serious injuries from insufficient or missing attachment of the modules!

Fasten and secure the modules so that uncontrolled movements of the modules are prevented in case of driving maneuvers or accidents!

- Use only support systems and fastening elements that do not damage the housing of the modules.
- Do not damage the housings of the modules! They may neither be spot-drilled nor fitted with drilled holes.
- When selecting the carrier system, observe the static and dynamic forces that could be created by the module or the module stack on the carrier system.
- To secure the module or the module stack, use exclusively materials that are suitable for accepting the static and dynamic forces.

Requirements for the ventilation

When operating the modules, an efficient heat exchange with the environment must be ensured:

- Keep the module away from heat sources and protect the module against direct exposure to the sun.
- Maintain minimum distances from the module to the top and a distance of at least 5 cm on both longitudinal sides of the system.
- The free space above and behind the module must be selected so that sufficient air circulation is ensured.
- Do not cover the ventilation slots of the module!
- Do not place the module or the module stack on one of the longitudinal sides with ventilation slots!
- Secure the module or the module stack so that their ventilation is not restricted.
- Do not operate the module in completely enclosed containers.

Connection between module and base module

The base module (e.g. ES801.1) must be screwed together with an ES800 module or with the lowest module of the module stack.

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- Prior to assembling (interconnecting) or separating a module stack, the modules must be disconnected from the supply voltage or they have to be in the standby operating mode.
- Remove the protective cap at the underside of the module and open the protective flap just before interconnecting the modules.
- Protect the system plug of the module during storage by affixing the protective cap and closing the protective flap.

**CAUTION!**

Risk of crushing during the mechanical connection of several modules!
Observe the description of the assembly steps in the User Guide.

Transport

- Transport the modules of the system only with protective flap closed and protective cap attached!
- Transport the modules only individually and not as a module group!
- Stack and connect the modules only at the location of the startup!
- Grab the modules for transport at the lower module housing or at the mounting plate.
- Do not transport the modules at the cable of the base module or any other cables.

**WARNING!**

Fire hazard!

The product ES820.1 / ES830.1 contains a UN38.3-conform lithium battery with a lithium content of 0.16 g / 0.00035 lb.
When shipping the product, observe the corresponding specifications.

Shipment and Packaging (ES820.1 / ES830.1)**WARNING!**

Fire hazard!

The product contains a UN38.3-conform lithium battery.

Lithium batteries that have been damaged or can potentially cause a dangerous development of heat, fire or short-circuits must not be shipped.

Note the additional requirements for shipment and packaging.

The shipment and packaging requirements that apply to this product, including the test summary of the battery, can be found in the product-specific area on the ETAS website:

www.etas.com/shipment_dangerous_goods

Maintenance

The product is maintenance-free.

Repair

If a repair of an ETAS hardware product should become necessary, send the product to ETAS.

Cleaning the module housing

- Before the cleaning, close the protective flap of the module and attach the protective cap to the lower plug connector!
- Use a dry or lightly moistened, soft, lint-free cloth for cleaning the module housing.
- Do not use any sprays, solvents or abrasive cleaners which could damage the housing.
- Ensure that no moisture enters the housing. Never spray cleaning agents directly onto the module.

Cleaning the fans of the module

- Before the cleaning, close the protective flap of the module and attach the protective cap to the lower plug connector!
- Clean the fans of the module only with water without any additives.
- Do not use any compressed air or sprays for cleaning the fans of the module.

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The housing and the connectors of the module as well as the plug connectors of the cables meet the degree of protection IP4x.

Opening the module**CAUTION!**

Damage of the module and loss of Properties acc. to IP4x!

Do not open or modify the module housing!

Work on the module housing may be performed only by ETAS.

Potential equalization**CAUTION!**

Potential equalization in the vehicle is possible via the shield of the connecting cables of the modules!

Install the modules only at locations with the same electrical potential or isolate the modules from the installation location.

Cabling

For detailed information about cabling, see the User Guide of the module.

Ambient conditions

Operating temperature range		-40 °C to +70 °C / -40 °F to +158 °F
Storage temperature range (module without packaging)		-40 °C to +85 °C / -40 °F to +185 °F
Relative humidity (non-condensing)		0 to 85% (operation), 0 to 95% (storage)
Operating altitude		max. 5000 m / 16400 ft.
Contamination level		max. 2 (acc. to IEC 60664-1 and IEC 61010-1)
Degree of protection	ES801.1, ES801.1-S, ES882.1, ES886.1, ES886.2 ES891.1, ES892.1	IP44
	ES820.1, ES830.1, ES850.1	IP40

Mechanical data

Dimensions (H x W x D)	ES801.1, ES801.1-S	54 mm x 155 mm x 87 mm / 2.13 in x 6.1 in x 3.43 in
	ES820.1, ES850.1	62.8 mm x 215 mm x 241 mm / 2.47 in x 8.46 in x 9.49 in
	ES830.1, ES882.1, ES886.1, ES886.2, ES891.1, ES892.1	62.8 mm x 215 mm x 230 mm / 2.47 in x 8.46 in x 9.06 in
Weight	ES801.1, ES801.1-S	0.77 kg / 1.70 lb
	ES820.1, ES830.1	3.7 kg / 8.16 lb
	ES882.1, ES886.1, ES886.2 ES891.1, ES892.1	2.92 kg / 6.44 lb
	ES850.1	3.02 kg / 6.66 lb

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Operating voltage		6 to 32 V DC
Current consumption	ES801.1, ES801.1-S	-
	ES820.1, ES830.1	Max. 8 A at 6 V DC Max. 5 A at 12 V DC Max. 2 A at 32 V DC
	ES850.1	Max. 4 A at 6 V DC Max. 2 A at 12 V DC Max. 1 A at 32 V DC
	ES882.1, ES886.1, ES886.2, ES891.1, ES892.1	Max. 7 A at 6 V DC Max. 5 A at 12 V DC Max. 4 A at 32 V DC
Overvoltage category (AC mains supply)		II

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Warning! If you fail to follow this safety advice, there might be a risk of death, serious injury or property damage. The ETAS Group and their representatives shall not be liable for any damage or injury caused by improper use of the product. ETAS provides trainings regarding the proper and intended use of this product.