

ES610.1 / ES620.1 / ES650.1



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>.

This ETAS product enables users to control systems which accomplish safety functions (e.g. in automobiles, automobile components and test facilities), to change safety relevant data, or to allocate those for further processing. Hence, the application of this product can be hazardous. 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's 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. Improper use or use by a user without sufficient qualification can lead to damages or injuries to one's health or damages to property.

The safety of systems using the product is the responsibility of the system integrator.

ES610.1 / ES620.1 / ES650.1General safety at work

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. The module is not suitable for installation in the engine compartment and similar environments. 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's Guide. With any deviating operation, the product safety is no longer ensured.
- 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.

**DANGER!**

Valid for ES610.1 and ES650.1: The measurement connections of the module may not be used for measuring the supply voltage!

**DANGER!**

Valid for ES620.1 and ES650.1: Thermocouples may not be installed on current-carrying parts!

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.

ES610.1 / ES620.1 / ES650.1Connection to the power supply

- The power cable must not be connected directly to the vehicle battery or lab power supply, but via a fuse of up to 20 A.
- Ensure that the connections of the lab power supply, the power supply at the module and the vehicle battery 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 cable 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 cables with safety banana plugs in areas with power outlets.

De-energizing the module

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

- Disconnecting the cables from the measurement inputs and
- Disconnecting the module from the power supply
 - Disconnecting the module from the lab power supply (disconnect device is the lab plug of the power cord or the plug of the power cord at the connection of the module)
 - or
 - Disconnecting the module from the vehicle battery (disconnect device is the lab plug of the power cord or the plug of the power cord at the connection of the module)
 - or
 - Disconnecting the vehicle battery.

Approved cables

- Use exclusively ETAS cables at the connections of the module!
- Adhere to the maximum permissible cable lengths!
- Do not use any 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 location

- Position the module or the module stack on a smooth, level and solid underground.
- The module or the module stack must always be securely fastened.

Fixing the modules on a carrier system

- 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.

Requirements on the ventilation

- Keep the module away from heat sources and protect it against direct exposure to the sun.
- The free space above and behind the module must be selected so that sufficient air circulation is ensured.

Assembling (interconnecting) the modules

- 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.

Transport

- Stack and connect the modules only at the location of the startup!
- Do not transport the modules at the cable of the module or any other cables.

Maintenance

The product is maintenance-free.

ES610.1 / ES620.1 / ES650.1Repair

If an ETAS hardware product should require a repair, return the product to ETAS.

Cleaning the module housing

- 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.

Ambient conditions

The housing and the connectors of the module as well as the plug connectors of the cables meet the degree of protection IP20.

Opening the module**CAUTION!**

Damage to the module and loss of properties based on IP20!

Do not open or modify the module housing!

Work on the module housing may only be performed 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's Guide of the module.

Ambient conditions

Operating temperature range	ES610.1 ES620.1 ES650.1	-40 °C to +70 °C / -40 °F to +158 °F
Storage temperature range (module without packaging)	ES610.1 ES620.1 ES650.1	-40 °C to +85 °C / -40 °F to +185 °F
Relative humidity (non-condensing)	ES610.1 ES620.1 ES650.1	0 to 95%
Operating altitude	ES610.1 ES620.1 ES650.1	max. 5000 m / 16400 ft.
Contamination level	ES610.1 ES620.1 ES650.1	2
Degree of protection	ES610.1 ES620.1 ES650.1	IP20

ES610.1 / ES620.1 / ES650.1Mechanical data

Dimensions (H x W x D)	ES610.1 ES620.1 ES650.1	72 mm x 126 mm x 160 mm / 2,83 in x 4,96 in x 6,3 in
Weight	ES610.1	1150 g / 2,54 lb
	ES620.1	1020 g / 2,25 lb
	ES650.1	1085 g / 2,39 lb

Voltage supply

Operating voltage	ES610.1 ES620.1 ES650.1	7 V to 29 V DC
Power consumption (operation)	ES610.1	max. 7.6 W
	ES620.1	max. 4.3 W
	ES650.1	max. 5.6 W
Power consumption (standby)	ES610.1 ES620.1 ES650.1	typ. 50 mW
Fuse	ES610.1 ES620.1 ES650.1	MINI, quick-acting, 58 V, 3 A

Electrical data

Maximum input voltage	ES610.1 ES620.1 ES650.1	Input to input: 60 V DC / 30 V AC
		Input to ground of supply voltage or housing: 60 V DC / 30 V AC

ETAS Contact Addresses

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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.