

## EC Type – Examination

Registered no.

TÜV CY 24 MD 02063

**Customer's name and address**

Gefran S.p.A.  
Via Sebina, 74  
25050 Provaglio d'Iseo (BS) – Italy

**Tested in accordance with**

Annex I Machinery Directive 2006/42/EC  
EN ISO 13849-1:2015 Safety of machinery – Safety-related parts of control systems – Part 1: General principles for design  
EN ISO 13849-2:2012 Safety of machinery – Safety-related parts of control systems – Part 2: Validation  
EN IEC 62061:2021 Safety of machinery - Functional safety of safety-related control systems  
IEC/EN 61508 (1-7):2010 Functional safety of electrical/electronic/programmable electronic safety-related systems

**Description of product**

Motor starter series G-Start

**Type Description according to Annex IV of Machinery**

Logic units to ensure safety functions

**Order number**

02063

**Validity**

From 24.01.2024 to 23.01.2029

**Date of issue**

24.01.2024

**Remark**

The EC Type – Examination certificate is used according to Article 12(3) b or 12(4) a of Council Directive 2006/42/EC relating to machinery. It confirms that the listed Annex-IV equipment complies with the principal protection requirements of the directive

TÜV CYPRUS Ltd (TUV NORD Group)  
The Head of the notified body,

The Inspector,

  
Fabio Porru

Accredited by CYS-CYSAB  
Certificate No. IB 002-2



*This document is not valid when presented without the full attached schedule composed of 7 sections and 4 pages This certifies the result of the examination of the product sample submitted by the manufacturer. A general statement concerning the quality of the products from the series manufacture cannot be derived there from.*

TÜV CYPRUS (TUV NORD) Ltd,  
2 Papaflessa Str., 2235 Latsia, Nicosia - P.O.Box: 20732, 1663 Nicosia, Cyprus  
Tel:+357 22 44 28 40 Fax:+35722 44 28 50 email: [info@tuvcyprus.com.cy](mailto:info@tuvcyprus.com.cy)  
[www.tuv-nord.com/cy](http://www.tuv-nord.com/cy)

This certificate may only be reproduced without any change, schedule included.  
Excerpts or changes shall be allowed by the TÜV CYPRUS Ltd

## EC Type – Examination *Registered no.* TÜV CY 24 MD 02063

### 1. Product Technical Specifications

The Gefran G-Start three-phase motor starter is a compact device (width 22.5mm) for DIN bar coupling, for the functional start / stop command and selection of the gear rotation of three-phase asynchronous motors up to 500Vac- with a power not exceeding 3kW - 7A. Motor control is achieved through a combination of relays and power semiconductors (Triacs) that minimize thermal dissipation inside the electrical panel also guaranteeing great product reliability. Integrates motor overload protection with automatic management of shutdown and relative engine cooling time. Advanced diagnostics with recognition of internal faults and lack of phase. On the front there is a selector to set the nominal current of the motor (tripping threshold of the overload protection) and 4 status LEDs for easy immediate diagnostics. The alarms can be reset manually via the front button or digital input or by selecting the automatic mode.

Main applications are:

- Small fans control
- Control of auger motors
- Hopper control
- Control of conveyor belts
- Pumps
- Direct motors for simple handling of loads

All models series G-START include:

- the control board, which is the same for all the models (pcb N° 455482)
- plastic enclosure, made by three parts
- DIN rail fixing

The models differ only in the motor current rating that the device can control and the presence of the reverse rotation command.

The only difference between products with different current sizes is the current measurement range, the safety function components (relays RL2, RL3, RL4) are the same for all the models.

From the point of view of the safety function, the control board includes:

- safety-related blocks
- diagnostic blocks
- other functional blocks (not safety-related)

The design is based upon the following general concepts:

- the product is always ready to execute the safety function

- safety function is executed by the product on demand. The safety function request comes from an external device (e.g. safety PLC, mushroom push-button, safeguard, ...) via:
  - cutting off the 24 V DC

The execution of the safety functions is performed solely via HW

### System versions:

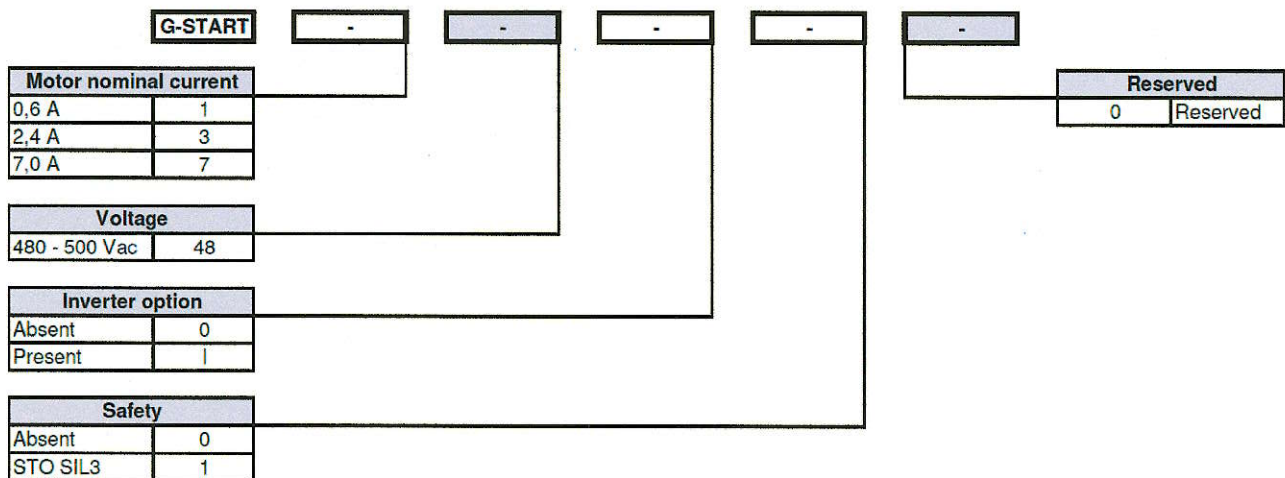
The hardware revision certified is:

- PCB: 455482 (PCB)
- BOM: 2.0

with the latest PCB and Schematics

- Schematics - SCH-00200-02
- Gerber files - 455482\_ORG (folder)

### Type coding of motor starter series G-Start:



### NOTES:

The safety circuit is the same for all models (the option safety is only for commercial purpose, all the products are the same)

### Safety functions:

The safety functions used in the product are the following:

#### 1. Safe shutdown:

In case of cutting-off of the 24 V DC power supply, the coils of the relays RL2 (contacts A and B), RL3 (contacts A and B), RL4 (contacts A and B) are not supplied anymore, the relays open, and the connected motor stops

#### 2. Technical file reference

See G-START/TF Motor Starter Series G-Start Technical File.

The complete listing is in the assessment report

### 3. Test report no.

Test documents according to applied standards are reported in the test report No. 24 MD 02063 dated 2024.01.24.

### 4. Application and Limitation

The above mentioned equipment is tested according the standards on the first sheet.

### 5. Notes for the erection and operation:

Refer to the user's instruction for safe and proper operation, maintenance and service of the unit.

### 6. Risks analysis

The risk analysis according to the applied standards is reported inside G-START/TF Motor Starter Series G-Start Technical File

### 7. Performance level evaluation and common cause failure analysis

The product can be declared as compliant to:

- EN IEC 62061:2021, SIL 3
- EN ISO 13849-1, EN ISO 13849-2, Category 3 PL e

for the safety functions specified above.

These results must be considered in combination with PFH values of other devices of a safety-related system in order to determine suitability for a specific PL or SIL.

Parameter	Value	Measuring Unit
Type (EN IEC 62061)	B	--
Architecture (EN IEC 62061)	1oo2(D)	--
HFT (EN IEC 62061)	1	--
Category (EN ISO 13849-1/2)	3	--
$\beta$ , $\beta_D$ factor	2	%
CCF	>65	--
SFF (EN IEC 62061)	$\geq 99$	%
DC <sub>avg</sub> (EN ISO 13849-1/2)	99	%
MTTF <sub>D</sub> (of each channel) (EN ISO 13849-1/2)	15020	years
PFH	1,52E-12	1/h
SIL (EN IEC 62061)	3	--
PL (EN ISO 13849-1/2)	e	--
Useful lifetime	20	years

**- End of certificate-**