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Introduction

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Introducción

ARTDrive G is a "General Purpose" range of inverters ideally suited to regulating the speed of an AC motor in any application where a high level of torque is required at start-up or during low speed operation. Typically, this includes extruders, mixers, presses, washers, compressors, centrifugal pumps, etc.

Equipped with a large number of standard I/O and a series of intelligent functions, the AGy inverter provides a single solution for a multitude of different market requirements - all in a financially competitive and highly versatile package.
A comprehensive range of dedicated options and accessories also guarantees total flexibility in meeting the vast range of different configurations demanded by modern control systems.

Designed and built with quick installation and programming in mind, AGy boasts a simple and intuitive "Start-up" menu, in addition to intelligent functions that enable the user both to program the machine and to manage its configuration.

Catering for a range of different types of power supply, the range of products are subdivided in the following manner:

AGy...-4 and **AGy...-4A** for use with a 230V…480V, 50/60 Hz
power supply rated from 5.5kW (7Hp) to 132kW (150Hp)

AGy...-5 for use with a 575V, 50/60 Hz
power supply rated from 2Hp to 150Hp

The intuitive AGy inverter programming software can be used to set up basic system settings and motor start-up in a simple and straightforward manner.
Menus are subdivided in a logical manner, whilst lending themselves to the creation of structures facilitating the speedy optimisation and setting of more complicated controls.

Menu d - Display	Monitor operating variables and parameters
Menu S - Startup	Quick start-up
Menu I - Interface	Inputs / Outputs setting
Menu F - Freq & Ramp	Frequencies and ramps setting
Menu P - Parameter	Parameters and functions setting
Menu A - Application	Application functions setting
Menu C - Command	Commands functions execution.

Prg Rev Fwd Hz A V

PARAMETER   P000
Cmd source sel

Identification Code

Codice di Identificazione
Code d'Identification
Identifikationscode
Siglas Identificación Producto

AGy ☐ ☐☐☐ ☐ ☐ ☐-☐☐-☐

Code	Description
AGy ☐☐☐☐K☐☐-☐☐-☐	**ARTDriveG** — AC Inverter, 3 phase input voltage / Inverter CA, alimentazione trifase / Variateur CA, alimentation triphasée / Drehstrom-Frequenzumrichter, dreiphasige Versorgung / Inverter CA, alimentación trifásica
AGy ☐☐☐☐K☐☐-☐☐-☐	**2, 3, 4, 5, 6, 7** — Enclosure dimension identification / Identificazione della dimensione custodia / Taille du boitier / Baugröße / Identificación de las dimensiones
AGy ☐☐☐☐K☐☐-☐☐-☐	**I.e, z.B.: 055 = 5.5kW** (**AGy...-4 , AGy...-4A**) — Inverter rated output power / Potenza nominale in uscita / Puissance nominale de sortie / Ausgangsnennleistung. **I.e, z.B.: 005 = 5Hp** (**AGy...-5**) / Potencia nominal de salida
AGy ☐☐☐☐K☐☐-☐☐-☐	**AGy...-4 = KBG-1 / AGy...-4A = KBG-LCD-A2 / AGy...-5 = KBG-LCD-A2** — Programming keypad / Tastierino di programmazione / Clavier de programmation / Programmierungs-Bedieneinheit / Teclado de programación
AGy ☐☐☐☐K☐☐-☐☐-☐	**X, B** — **X** = without integrated braking circuit, **B** = with integrated braking circuit / **X** = senza unità di frenatura interna, **B** = con unità di frenatura interna / **X** = sans unité de freinage interne, **B** = avec unité de freinage interne / **X** = ohne Bremskreis, **B** = integrierter Bremskreis / **X** = suministro sin unidad de frenado integrada, **B** = suministro con unidad de frenado integrada
AGy ☐☐☐☐K☐☐-☐☐-☐	**X** — Standard software / Software standard / Logiciel standard / Standardsoftware / Software estándar
AGy ☐☐☐☐K☐☐-☐☐-☐	**4, 4A, 5,** — **-4** = standard version, **-4A** = American version, **-5** = 575V version / **-4** = versione standard, **-4A** = versione America, **-5** = versione 575V / **-4** = version standard, **-4A** = version Amérique, **-5** = version 575V / **-4** = Standardausführung, **-4A** = Ausführung für Amerika, **-5** = 575 V Ausführung / **-4** = versión estándar, **-4A** = versión América, **-5** = versión 575V
AGy ☐☐☐☐K☐☐-☐☐-☐	**C, [blank]** — **C** = CANopen/DeviceNet Integrated, **[blank]** = without CANopen (standard) / **C** = CANopen/DeviceNet Integrato, **[vuoto]** = senza CANopen (standard) / **C** = CANopen/DeviceNet Intégré, **[vide]** = sans CANopen (standard) / **C** = CANopen/DeviceNet integriert, **[leer]** = ohne CANopen (Standard) / **C** = CANopen/DeviceNet Integrado, **[vacío]** = sin CANopen (estandar)

ARTDriveG

CANopen **Modbus** **DeviceNet™** **PROFI BUS** PROCESS FIELD BUS CSA UL c UL us

"AGy...-4" series

- Three phase power supply
  230V -15% … 480V +10%, 50/60Hz ±5%
- Motor power rating from 5.5kW to 132kW
- Standard version complete with default setting
  for a 400V, 50Hz power supply

"AGy...-4A" series

- Three phase power supply
  230V -15% … 480V +10%, 50/60Hz ±5%
- Motor power rating from 5.5kW to 132kW
  (7Hp to 150Hp)
- "American" version complete with default setting
  for a 460V, 60Hz power supply

"AGy...-5" series

- Three phase power supply 575V ±10%,
  50/60Hz ±5%
- Motor power rating from 2Hp to 150Hp
- Version complete with default setting for a
  575V, 60Hz power supply

Standard

- Output frequency up to 500Hz
- Integrated dynamic brake unit
- Variable and constant torque control
- 16 programmable multispeeds
- 4 programmable multiramps
- Control functions:
  - "autocapture"
  - Mains loss detection with controlled stop
  - Programmable autorestart
  - PID applications block
  - Energy saving
  - Skip frequencies
- Programmable overload in accordance with EN 60146-1-1 Classes 1 and 2
- Field bus interface : ProfiBus, CANOpen and DeviceNet
- Integrated management for remote I/O control
- Open or closed speed loop control via encoder

Standard Configuration

- **KBG-1**: 7 segment LED programming keypad for AGy...-4 version
- **KGB-LCD-A2**: multilingual programming keypad (ENG-FR-SP) complete with alphanumeric display for the AGy...-4A and AGy...-5 versions
- 2 analog differential inputs 0V…±10V and/or 0…+10V
- 1 analog current input 0…20mA and/or 4…20mA
- 2 analog programmable voltage outputs 0…10V (±10V)
- 8 digital programmable inputs (PNP or NPN logic)
- 2 digital programmable static outputs (open collector)
- 2 programmable relay outputs (double dry contact)
- RS485 serial line (Modbus RTU or Jbus protocol)

Options

- **KGB-LCD-2**: multilingual programming keypad (IT-ENG-GER) complete with alphanumeric display
- **EXP-D6A1R1-AGy**: Inputs / Outputs expansion
- **EXP-D8-120**: digital inputs interface at 120V$_{AC}$
- **QUIX-ENC**: encoder feedback management
- **SBI-PDP-AGy**: ProfiBus (Profidrive) interface
- **SBI-COP/DN-AGy**: CANOpen and / or DeviceNet interface
- **PRG-KEY**: data storage device

Accessories (Optional)

- Dedicated EMC filters (in compliance with EU directive EN50178)
- Brake resistance (standardised for the entire range)
- Input and output inductances (standardised for the entire range)
- Kit for installing NEMA 1 type protection
- Remote keypad kit

Ambient conditions

Housing: IP20 (NEMA1 optional)
Ambient temperature: from 0°C to 40 °C, from + 40 °C to +50 °C with derating.
Humidity: from 5% to 85%, relative humidity (without condensation) or ice formation (category 3K3 in compliance with EN50178)
Altitude: up to 1000 metres above sea level. Above this ceiling, that the current is reduced by 1.2% for each additional 100 metres in altitude.

Regulations and Brands

EU: conforms to the relevant EU low voltage equipment directive.
UL, cUL: conforms to directives for the US and Canadian markets.
CSA: conforms to directive for the Canadian market.
EMC: conforms to EU directive EN 61800-3, relating to electromagnetic compatibility with the use of optional filters.

Software
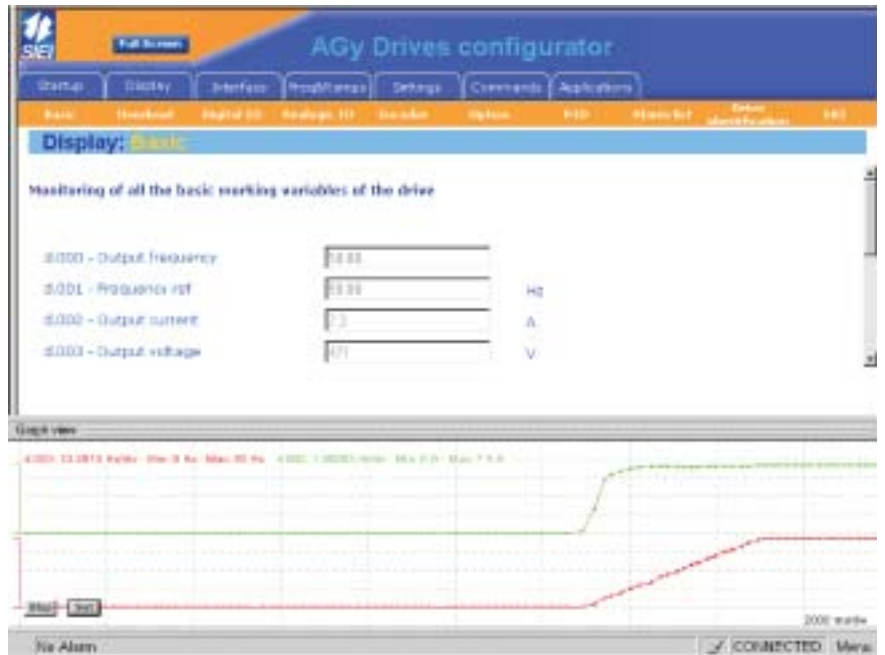
E@syDrives

🇬🇧 The E@syDrives configurator allows users to configure and operate AGy series inverters via the PC.

The menu structures are subdivided into HTML pages and allow for straightforward interfacing. This in turn, facilitates quick and easy start-up, optimisation and diagnostics.

E@syDrives operates in a typical Windows environment by displaying dialogue windows and toolbars, both for programming the inverter and for the management and storage of the configuration files in question.

The configurator can be installed on any PC running Windows 95 or above.

E@syDrives is included on the CD-ROM stored inside the drive packaging. The configurator can therefore be used to carry out the following operations:
- serial communication with the drive via the Modbus RTU or Jbus protocol
- multidrop network management for up to 32 inverters
- reading and writing of all parameters / commands
- configuration via HTML graphics pages
- configuration via parameter numerical index
- reading of all system variables
- oscilloscope function capable of graphically displaying signal trends
- parameter storage on drive memory
- configuration file management and storage
- on-line and off-line configuration

PC tool "E@syDrives"

The E@syDrives pc tool, allows the user to configure and
control the AGy inverter through the PC.
Using a simple HTML structure menu, the configurator offers an
intuitive interface with the drive as well as fast and easy start-up
procedures, optimization of the system and diagnostics.
- serial communication via Modbus (Jbus) protocol
- multidrop configuration up to 32 inverters
- reading and writing of all the parameters / commands
- configuration through HTML pages
- configuration through parameters numeric index
- complete reading of the system variables
- trend recorder function
- management of the configuration files
- on-line and off-line configuration modes

Standard Configuration

"AGy…-4" Series
- Supply 3ph 230V –15%…480V +10%   50/60Hz ±5%
- Motor powers from 5.5 up to 132kW (0.75...4kW on request)
- Standard version with default setting for supply 400V – 50Hz
- Standard setting with LED keypad "KBG-1"

"AGy…-4A" Series
- Supply 3ph 230V –15%…480V +10%   50/60Hz ±5%
- Motor powers from 0.75 up to 132kW (1Hp up to 150Hp)
- "AMERICAN" version with default setting for supply 460V – 60Hz
- Standard setting with multilanguages keypad "KBG-LCD- A2" (ENG-FR-SP)

"AGy…-5" Series
- Supply 3ph 575V ±10%   50/60Hz ±5%
- Motor powers from 2Hp up to 150Hp
- Version with default setting for supply 575V 60Hz
- Standard setting with multilanguages keypad "KBG-LCD-A2" (ENG-FR-SP)

ARTDriveG

The ARTDriveG inverter series has been designed to satisfy the
typical needs of modern control systems, where innovative technical
solutions and high performance are essential.

It is expressly developed to provide the best performance in applica-
tions where high torque is required at start-up or at low frequencies.
Thanks to its smart integrated functionality, the AGy inverter has
a high number of I/O and a wide range of options, allowing full
flexibility and adaptability for all automation requirements.

A simple programming structure, guarantees a quick motor "start-up"
and/or more complex systems regulation, either through the simple-to-
use standard keypad or through using the E@syDrives PC tool.

Available for universal supplies and with a wide power range, modular
structure and dedicated accessories line, AGy offers the basis for effi-
cient configurations and economically competitive solutions.

A single "Drive" for every solution

- Supply:
  3 x 230V…480V   50/60Hz (AGy…-4 and AGy…- 4A series)
  3 x 575Vac   50/60Hz (AGy…-5 series)
- Motor powers from 0.75kW (1Hp) up to 132kW (150Hp)
- Output frequency 500Hz
- Integrated braking module up to 15kW, integrated
  option up to 55kW
- Speed feed-back with closed loop through encoder (option)
- Digital I/O logic control in PNP and/or NPN configuration
- 3 Differential analog inputs ±10V (or current)
- 3 Analog outputs (±10V)
- 8 Digital inputs
- 4 digital outputs (2 static and 2 relays)
- Programmable overload up to 150% in accordance with
  IEC146-1-1 Class 1 e Class 2
- LCD multilanguages keypad or numeric display keypad
- RS485 Serial line (Modbus RTU protocol)
- Interfacing with fieldbus protocol as:
  ProfiBus (Profidrive) – CANOpen – DeviceNet
- Integrated CANOpen/DeviceNet version
- Protection degree IP20 (option IP54 for external heatsink
  mounting)

Full flexibility

- Motor parameters self tuning
- Programmable and predefined V/f curves
- 4 Independent programmable ramps
- 16 Programmable multispeed
- "Autocapture" function (Flying restart)
- Mains loss detection with controlled stop
- Programmable autorestart
- PID Application block
- Energy saving function
- Skip frequencies
- Motor thermal protection
- Virtual and remote I/O standard management

Options

- Programming multilanguages keypad KBG-LCD-2 (IT-ENG-GERM)
- Programming multilanguages keypad KBG-LCD-A2 (ENG-FR-SP) for AGy…-4 version
- I/O expansion card EXP-D6A1R1-AGy
- 120Vac Digital input interface EXP-D8-120
- Encoder feed-back interface QUIX-ENC
- ProfiBus interface card SBI-PDP-AGy
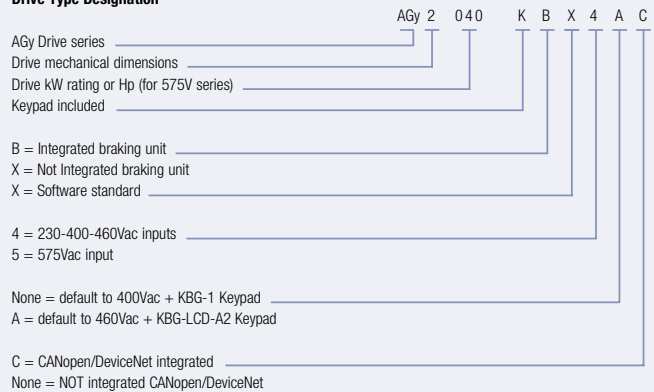- Memory key PRG-KEY

Flexibilidad total

- Auto ajuste de los parámetros del motor
- Curvas V/f programables y predefinidas
- 4 rampas programables independientes
- 16 multivelocidades programables
- Función "Autocapture" (Reinicio al vuelo)
- Autoreinicio programable
- Bloque de aplicación PID
- Función de ahorro de energía
- Frecuencias de salto
- Protección térmica del motor
- Gestión estándar de E/S virtual y remota

Opciones

- Teclado multilingüe de programación KBG -LCD-2 (IT-ENG-GERM)
- Teclado multilingüe de programación KBG-LCD-A2 (ENG-FR-SP) para la versión AGy…-4
- Tarjeta de ampliación de E/S EXP - D6A1R1 - AGy
- Interface de entrada digital de 120 Vca EXP-D8-120
- Interface de retroalimentación del encoder QUIX-ENC
- Tarjeta de interface ProfiBus SBI-PDP-AGy
- Tecla de memoria PRG-KEY

Drive Type Designation

AGy 2 040 K B X 4 A C

AGy Drive series
Drive mechanical dimensions
Drive kW rating or Hp (for 575V series)
Keypad included

B = Integrated braking unit
X = Not Integrated braking unit
X = Software standard

4 = 230-400-460Vac inputs
5 = 575Vac input

None = default to 400Vac + KBG-1 Keypad
A = default to 460Vac + KBG-LCD-A2 Keypad

C = CANopen/DeviceNet integrated
None = NOT integrated CANopen/DeviceNet

Accessories

- Dedicated EMC filters
- Braking resistors (standardized for the whole line)
- Input and Output choke (standardized for the whole line)
- NEMA 1 type Kit
- Programming remote keypad Kit

Accesorios

- Filtros EMC específicos (de acuerdo con la directiva europea CEE – EN61800-3 / A11)
- Resistencias de frenado (estandarizadas para toda la línea)
- Difusor de entrada y de salida (estandarizado para toda la línea)
- Kit tipo NEMA 1
- Kit de teclado remoto de programación