## STG-800

Power Mini-PLC ARM<sup>®</sup> Cortex<sup>®</sup>

<b>3</b> Analog Input	<b>2</b> Digital Input	<b>4</b> Power Output	<b>1</b> POWER PWM
FREQUENCY MEASURING	PULSE MEASURING		LIT SOLID STATE
CAN 2.0A/B open®	SAE J1939	miCon-L	LOLOL LLOLO OPEN SOURCE
ARM® cortex®	<b>F°C</b> -40/+70	- + 732V=	(( )) Shock Proof



### **FEATURES**

- Tiny and super-flat CAN Logic Controller
- High-Performance 32 Bit ARM<sup>®</sup> Cortex<sup>®</sup>
- 3 analog Inputs 0 to 30 VDC, 12 bit ADC
- Event Counter Input 25 kHz
- Pulse and Frequency Counter Input 40µs
- 4 Solid-State Power Outputs up to 1.5 A
- 1 Power PWM Output 16 Bit 1 Hz to 25 kHz
- CAN 2.0A/B and SAE J1939 Interface
- CANopen<sup>®</sup> Interface (Open Source)
- Comprehensive Fail Safe Functions
- TTL-232 3.3V Interface
- Intuitive graphical Programming Capability
- Open Source Programming Option
- Wide Operating Voltage Range 7 to 32 VDC
- Wide Operating Temp. Range -40 to +70°C
- Vibration resistant and rugged Sealing
- Engineered and manufactured in Germany

### **APPLICATIONS**

- Industrial and Building Automation
- Automotive and Maritime Technology
- Technical Education / University
- White Goods

#### DESCRIPTION

The tiny STG-800 extends the well established BARTH<sup>®</sup> Mini-PLC series with the smallest model coming with a powerful 32 bit ARM<sup>®</sup> Cortex<sup>®</sup> Core. As the top-of-the-range product the STG-800 features a rugged CAN/CANopen<sup>®</sup> interface with intuitive graphical programming capability at lowest current consumption and the well-known small form factor.

The 32 bit ARM<sup>®</sup> Cortex<sup>®</sup> core now provides two high speed event, pulse and frequency counter inputs and one 16 bit PWM output combined with a precise internal voltage reference for the 12 bit analog inputs. The automotive-qualified CAN2.0A/B/CANopen<sup>®</sup> interface is able to operate in noisy environment and allows the user to connect a variety of network components to the Mini-PLC.

The STG-800 does not need any peripheral components to operate. Both inputs and outputs features highly integrated and rugged protection circuits to operate the Mini-PLC in really harsh environment.

These outstanding features open up a variety of application fields in industrial, automotive and 12/24V battery-powered applications.

The STG-800 is also available as customer-tailored OEM version within 8 weeks.

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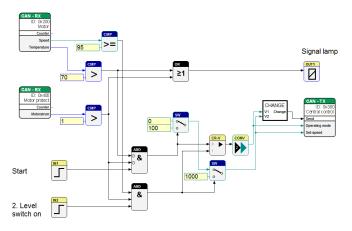


# STG-800

## **PROGRAMMING WITH MICON-L**

Without learning a difficult programming language the Mini-PLC STG-800 can be easily programmed using simple and vivid graphical function blocks. This block design meets graphical standards of the latest graphical programming languages.

The miCon-L software suite features programming, simulation and test in one unique software design tool. The flexible CAN programming option offers a variety of possibilities in industrial, automotive and maritime applications. CAN programming has never been easier!



### **OPEN SOURCE C-PROGRAMMING**

The STG-800 can also be programmed as Open Source Mini-PLC using the powerful KEIL<sup>®</sup> µVision<sup>®</sup> Software Suite. For everyone who is familar with C-Programming this option opens up a variety of hardware-oriented features in a realtime environment with powerful debugging features.

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## **SPECIFICATIONS**

<b>Operation Voltage</b>	7 to 32 VDC					
Current Consumption	nominal 10 mA at 32 VDC					
Fusing	5 A max. (external)					
CAN	CAN 2.0A/B (miCon-L/Open Source) 50, 100, 125, 250, 500 kbit, 1Mbit CANopen <sup>®</sup> , SAE J1939 (OS) NMEA 2000 (OS)					
Analog Input IN1 - IN3	$U_{IN} = 0$ to 30 VDC, $R_{I} > 11$ kOhm					
Digital Input IN4 - IN5	$\begin{array}{l} U_{_{IN}} = 0 \text{ to } 30 \text{ VDC}, \ R_{_{I}} > 20 \text{ kOhm} \\ U_{_{LOW}} < 3 \text{ VDC}, \ U_{_{HIGH}} >= 5 \text{VDC} \\ f_{_{IN}} <= 25 \text{ kHz}, \ t_{_{IN}} >= 40 \ \mu \text{s} \end{array}$					
Accuracy ADC	< 0,15 VDC 12 Bit					
Digital Output OUT1 - OUT4	$I_{_{OUT}} \le 1.5 \text{ A} \text{ (resistive load)}$ @ $f_{_{OUT}} = 0 \text{ to } 100 \text{ Hz}$ $U_{_{OUT}} \ge U_{_{IN}} - 0.45 \text{ V}, I_{_{TOT}} \le 4 \text{ A}$					
PWM Output OUT5	$I_{OUT} \le 2 \text{ A}$ (resistive load) @ $f_{OUT} = 0$ to 25 kHz (16 bit) $U_{OUT} \le \text{GND}+0.25 \text{ V}$					
Memory	256 kB Flash program memory 32 kB SRAM, 64 kB EEPROM					
Security Features	System and independent watchdog Fail safe oscillator Power on/down reset Supply voltage supervisor					
Conformity	2004/108/EG, 2004/108/EC 2014/30/EU					
Electrical Connection	plugable spring terminal connectors 0.25 to 1.5 mm <sup>2</sup>					
Operation Temp.	-40 to +70 °C (IEC 60068-2-1/2)					
Storage Temp.	-40 to +70 °C (IEC 60068-2-1/2)					
Shock Resistance	min. 100 m/s² (10G)					
Vibration Resistance	min. 50 m/s² (5G) @ 10 to 100 Hz					
Protection Grade	IP 20					
Housing Material Potting Material	Grilon TSG-30/4, UL: V0 Polyurethane resin, UL: V0					
Weight	50 g (without connectors)					
Dimensions	60 x 45 x 11 mm (LxWxH)					
Ordering Information Mini-PLC	Mini-PLC STG-800 Art. No. 0850-0800 GTIN 4251329401207					
Ordering Information Accessory	Connection Cable VK-16 (miCon-L) Art. No. 0091-0016 GTIN 4251329400187					
	Connection Cable VK-35 (OS) Art. No. 0091-0035 GTIN 4251329401276					
	Programmer ST-Link/V2 ISOL Art. No. 0017-0066 GTIN 4251329401269					

### **DOCUMENTS, VIDEOS & SOFTWARE**

www.barth-elektronik.de

www.micon-l.de

www2.keil.com/stmicroelectronics-stm32/mdk

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