










STG-810

IrDA Mini-PLC
ARM® Cortex®

3 ANALOG INPUT	2 DIGITAL INPUT	4 POWER OUTPUT	1 POWER PWM
 FREQUENCY MEASURING	 PULSE MEASURING	 EVENT COUNTER	 SOLID STATE
CAN 2.0A/B open@	SAE J1939	 IrDA	 OPEN SOURCE
ARM® CORTEX®	 -40/+70	 7..32V=	 SHOCK PROOF



FEATURES

- Tiny and super-flat CAN Logic Controller
- High-Performance 32 Bit ARM® Cortex®
- 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® Interface
- IrDA/SIR Interface
- TTL-232 3.3V Interface
- Comprehensive Fail Safe Functions
- Open Source ,C' Programming
- Compatible with PG-65 Programmer
- 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

DESCRIPTION

The tiny STG-810 extends the well established BARTH® Mini-PLC series with the smallest model coming with a powerful 32 bit ARM® Cortex® Core and IrDA interface.

As the top-of-the-range product the STG-810 features rugged CAN/CANopen® connectivity with Open Source ,C' programming capability at lowest current consumption and the well-known small form factor.

The 32 bit ARM® Cortex® core 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® 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-810 can be easily interfaced using the PG-65 Programmer to upload and download user-specified program parameters.

The STG-810 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.

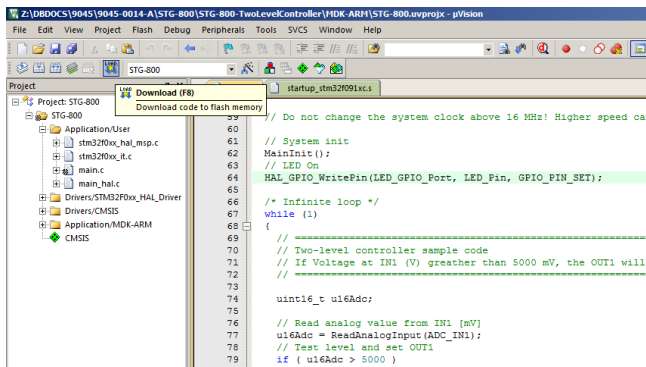
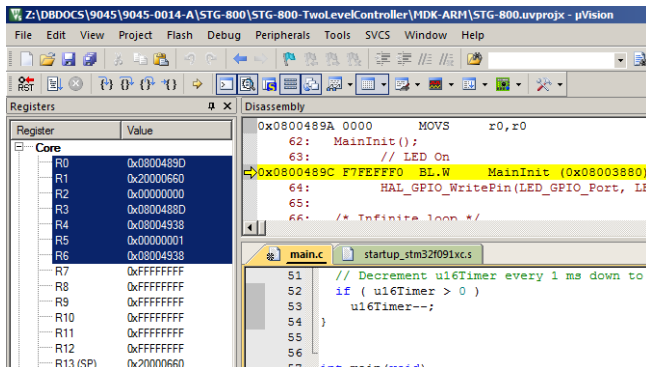
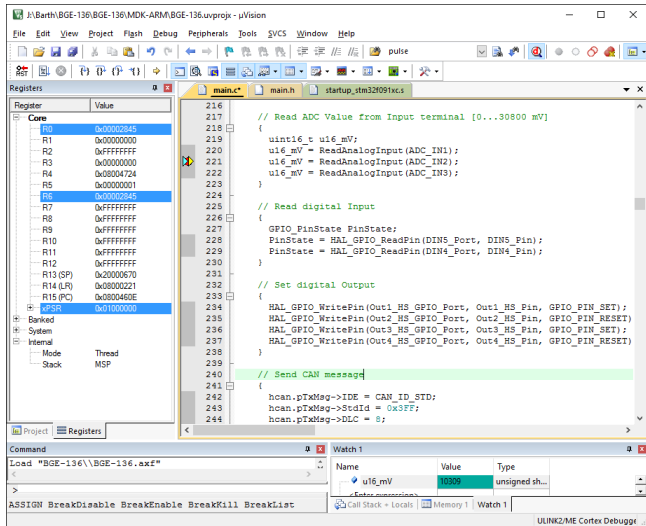
These outstanding features open up a variety of application fields in industrial, automotive and 12/24V battery-powered applications.

The STG-810 is also available as customer-tailored OEM version within 8 weeks.

STG-810

OPEN SOURCE C-PROGRAMMING

The STG-810 can be programmed as Open Source Mini-PLC using the powerful KEIL® µVision® Software Suite. For everyone who is familiar with C-Programming this outstanding feature opens up a variety of hardware-oriented possibilities in a realtime environment with powerful debugging options.



SPECIFICATIONS

Operation Voltage	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®, SAE J1939 (OS) NMEA 2000 (OS)
IrDA	SIR (9.6 kbit/s to 115.2 kbit/s) IrPHY
Analog Input IN1 - IN3	$U_{IN} = 0$ to 30 VDC, $R_I > 11$ kOhm
Digital Input IN4 - IN5	$U_{IN} = 0$ to 30 VDC, $R_I > 20$ kOhm $U_{LOW} < 3$ VDC, $U_{HIGH} \geq 5$ VDC $f_{IN} \leq 25$ kHz, $t_{IN} \geq 40$ µs
Accuracy ADC	$< 0,15$ VDC 12 Bit
Digital Output OUT1 - OUT4	$I_{OUT} \leq 1.5$ A (resistive load) @ $f_{OUT} = 0$ to 100 Hz $U_{OUT} \geq U_{IN} - 0.45$ V, $I_{TOT} \leq 4$ A
PWM Output OUT5	$I_{OUT} \leq 2$ A (resistive load) @ $f_{OUT} = 0$ to 25 kHz (16 bit) $U_{OUT} \leq GND + 0.25$ 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	pluggable spring terminal connectors 0.25 to 1.5 mm ²
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/s ² (10G)
Vibration Resistance	min. 50 m/s ² (5G) @ 10 to 100 Hz
Protection Grade	IP 20
Housing Material	Grilon TSG-30/4, UL: V0
Potting Material	Polyurethane resin, UL: V0
Weight	50 g (without connectors)
Dimensions	60 x 45 x 11 mm (LxWxH)
Ordering Information Mini-PLC	Mini-PLC STG-810 Art. No. 0850-0810 GTIN 4251329401320
Ordering Information Accessory	Connection Cable VK-35 Art. No. 0091-0035 GTIN 4251329401276 Programmer ST-Link/V2 ISOL Art. No. 0017-0066 GTIN 4251329401269 Parameter Programmer PG-65 Art. No. 0017-0065 GTIN 4251329401283

DOCUMENTS, VIDEOS & SOFTWARE

www.barth-elektronik.de

www2.keil.com/stmicroelectronics-stm32/mdk