VariStep3
MOTORTECH Stepper Motor Driver

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■ Technical Data

VariStep3≡
MOTORTECH STEPPER MOTOR DRIVER

MOTORTECH Stepper Motor Driver

The VariStep3 stepper motor driver enables optimum control of the various VariFuel2 air/gas mixer types and ITB throttle bodies with integrated stepper motor from MOTORTECH.

- ■ Precise air/gas mixer and throttle body adjustment due to microstep operation
- ■ Very fast response times
- ■ Increased power output provides high torque and quick movement even when driving big stepper motors
- ■ Accelerated reference run
- ■ LEDs displaying unit status and activity
- ■ Combination of several units without signal amplifier/splitter
- ■ Integrated CANopen and Modbus RTU interface
- ■ Configuration via MICT software
- ■ Error data logging for improved diagnostic options
- ■ Compact design
- ■ Plug-in terminals
- ■ Easy access to connectors and switches
- ■ Switch board installation on DIN rail

Technical Data

- ■ 18 to 32 V DC power supply
- ■ -20 °C up to +60 °C (-4 °F up to 140 °F) permitted ambient temperature
- ■ 0 to 20 mA/0 to 10 V analog input and output, flexible configuration
- ■ 5 digital inputs, 5 to 32 V compatible, DC-isolated
- ■ 6 digital outputs, up to 32 V, 100 mA, DC-isolated

Interfaces
- ■ CAN Bus 2.0b interface (CANopen protocol)
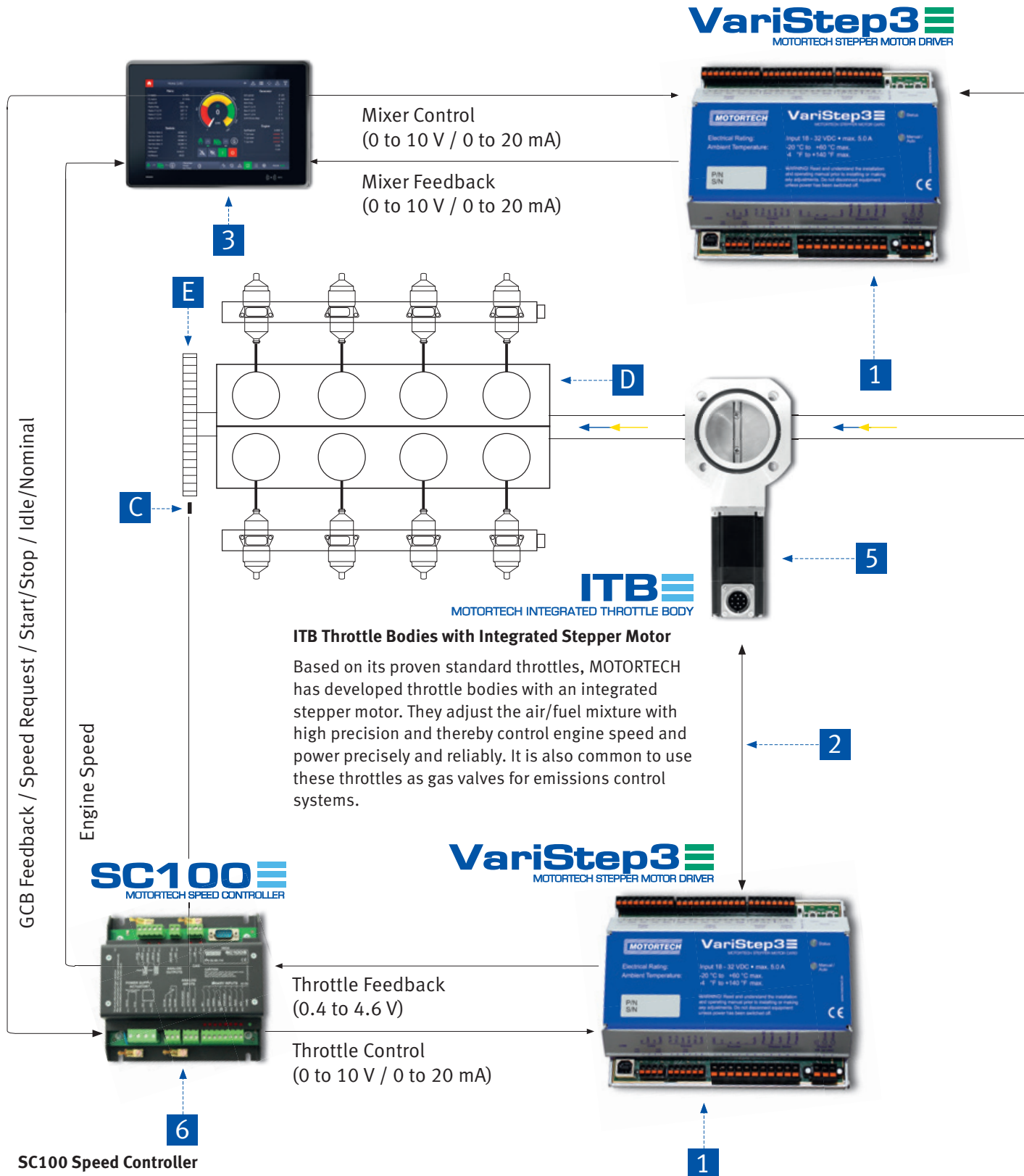- ■ RS485 interface (Modbus RTU)
- ■ USB 1.1 interface

Configuration
- ■ Using the graphic user interface MICT (MOTORTECH Integrated Configuration Tool)
- ■ Manual control via push-button

Housing
- ■ Protection class IP 20
- ■ Dimensions 160 x 126 x 62 mm (6.3 x 5.0 x 2.4 in)

System Overview

VariStep3
MOTORTECH STEPPER MOTOR DRIVER

Mixer Control
(0 to 10 V / 0 to 20 mA)

Mixer Feedback
(0 to 10 V / 0 to 20 mA)

3

E

D

1

C

5

ITB
MOTORTECH INTEGRATED THROTTLE BODY

ITB Throttle Bodies with Integrated Stepper Motor

Based on its proven standard throttles, MOTORTECH has developed throttle bodies with an integrated stepper motor. They adjust the air/fuel mixture with high precision and thereby control engine speed and power precisely and reliably. It is also common to use these throttles as gas valves for emissions control systems.

2

GCB Feedback / Speed Request / Start/Stop / Idle/Nominal

Engine Speed

VariStep3
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SC100
MOTORTECH SPEED CONTROLLER

Throttle Feedback
(0.4 to 4.6 V)

Throttle Control
(0 to 10 V / 0 to 20 mA)

6

1

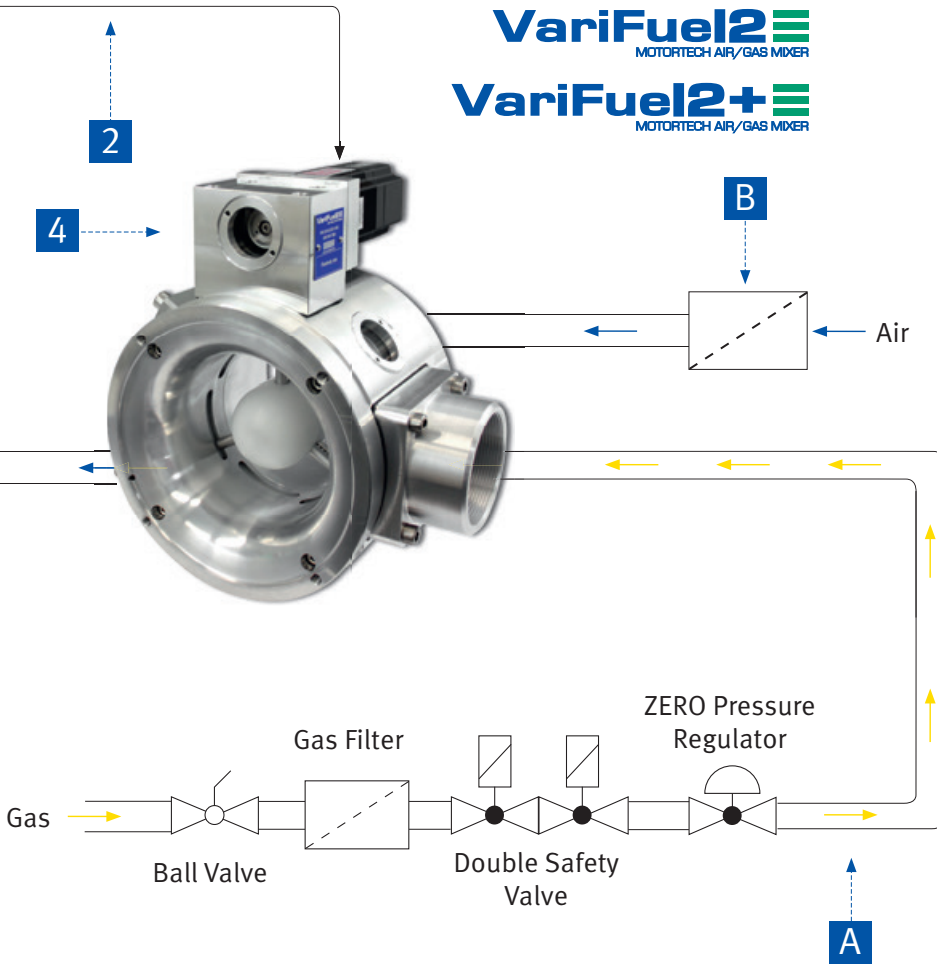**SC100 Speed Controller**

The SC100 is a digital speed controller for stationary gas engines, which can control various types of actuators and guarantees precise and fast control of the engine speed in island and mains parallel operation.

3

VariFuel2
MOTORTECH AIR/GAS MIXER

VariFuel2+
MOTORTECH AIR/GAS MIXER

2

4

B

Air

ZERO Pressure Regulator

Gas Filter

Gas

Ball Valve

Double Safety Valve

A

VariFuel2 and VariFuel2+ Air/Gas Mixer

MOTORTECH's VariFuel2 and VariFuel2+ are high-tech variable Venturi type air/gas mixers that can constantly adjust to any fuel changes and allow the engine to operate at its most efficient point. Coupled to an air/fuel ratio controller, lean-burn or stoichiometric, they precisely regulate the mixture.

VariFuel2 and VariFuel2+ air/gas mixer series 100, 140, 200, 250, 300 and 350 are available for engines with an air requirement up to 12.000 m^3/h and are equipped with a high precision stepper motor which is extremely precisely actuated by the VariStep3 stepper motor driver. Different flow bodies and variable gas inlet and mixture outlet configurations allow flexible adaptation of the gas mixer to the respective application.
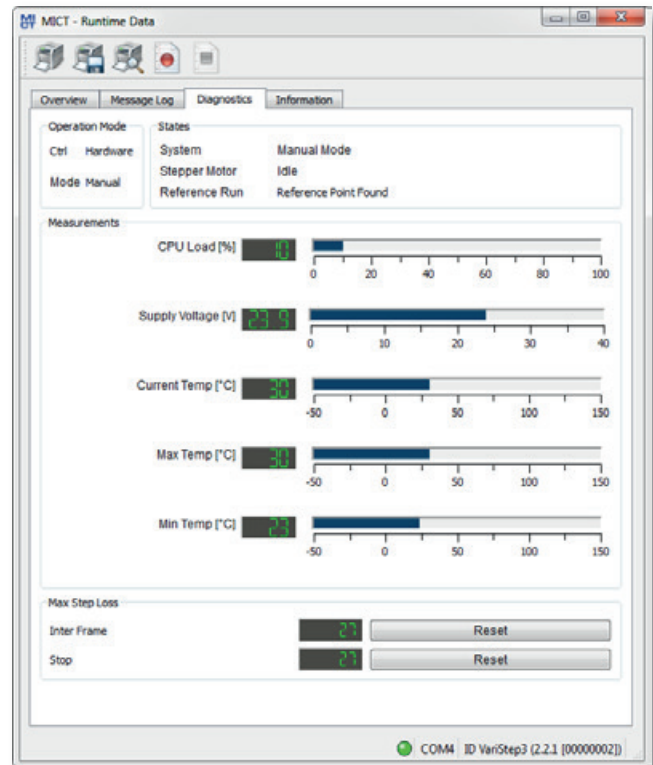
Description

1 VariStep3 stepper motor driver
2 Stepper motor harness
3 Master control / Emission control system
4 VariFuel2/VariFuel2+ air/gas mixer
5 ITB throttle body with integrated stepper motor
6 SC100 speed controller

A Gastrain
B Air filter
C Magnetic pickup
D Engine
E Flywheel

■ Ordering Information

MICT
MOTORTECH Integrated Configuration Tool

The MICT is the graphical user interface for the VariStep3 stepper motor driver. All functions of the VariStep3 are user programmable and can be displayed individually.

- ■ Language selectable (DE/EN/CN)
- ■ Microsoft® Windows 7 and Windows 10 compatible
- ■ Programmable for different VariFuel models, ITB throttle series and throttle body drive kits
- ■ Configuration of inputs and outputs
- ■ Preadjustment of two fixed mixer positions
- ■ Display of debit and actual value as well as operation status
- ■ Permanent data acquisition
- ■ Configuration of CAN Bus interface for ALL-IN-ONE signals
- ■ Print function of a given moment in the operation can be used for external problem analysis, etc.
- ■ Context sensitive online help
- ■ Different access levels to avoid accidental misconfigurations

Ordering Information

P/N	Description	Scope of Supply
31.01.960	VariStep3 stepper motor driver	Stepper motor driver, USB interface cable, MICT configuration software, Operating manual

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