SCHAEFFLER ENGINEERING

PROtroniC TargetLINE

2-in-1 Control Unit for Prototyping and Series





Prototyping and series become one with the PROtroniC TargetLINE

First we built a bridge between development and series production – now we are going one step further. With the **PROtroniC** TargetLINE prototyping and series control units become one.

ECU development today

Especially regarding the hardware, Rapid Control Prototyping and series production have been two different worlds up to this day. In the case of development control units, degrees of freedom and computing power were what counted, while cost, space and application-oriented performance optimization were crucial for series production units. This also had an impact on the portability of software developed on a prototyping ECU and then reused for series production.

At home on both worlds

The **PROtroniC** TargetLINE puts an end to the difference between prototyping and production control units. Because at a time when mobility and locomotion are being reconsidered, why not break new ground with control units?

One concept, numerous application options

The standard and series versions of the *PROtroniC TargetLINE* are based on reusable, verified and tested functions blocks:

- qualified housing and connectors from mass production,
- validated and qualified hardware function blocks,
- **software** modules with a high maturity level already tested in the field.

In addition to that, the application software based on the prototyping ECU version can be completely reused for the new, cost-optimized series ECU variant – without breaking the toolchain.



PROtroniC TargetLINE: designed for ISO 26262 ASIL-D requirements for functional safety.

2 in 1 concept for prototyping and series applications



Adapts to (almost) any application – the PROtroniC TargetLINE



Generic Vehicle Control Unit

The **PROtroniC** TargetLINE is designed as a generic Vehicle Control Unit. This means it can be used as a vehicle, hybrid or powertrain master ECU. In practice, it can be used in a fuel cell or battery electric vehicle, for example

Development and validation of alternative drive train technologies

For development and validation, the standard version of the *PROtroniC TargetLINE* can take over the following tasks, among others:

- determining system variables such as pressure and temperatures,
- controlling actuators, pumps and fans,
- controlling or switching e-axis,
- controlling fuel system components or
- controlling thermal management.



Aluminum housing from mass production: 277mm x 242mm x 44mm (L x W x H)

Hardware adaptations using FPGA technology

Competence in development and control units since 1979

For more than twenty years, we have been supporting some of our customers as a supplier of control units and, with the continuous development of hardware and software, we contribute to the fact that our customers' solutions set standards. Our motto has always remained the same: quality regardless of the quantity. For more infomation please visit www.schaeffler-engineering.com

Individual requirements, individual ECU with approved and verified functions blocks



The **PROtroniC** TargetLINE is a series ECU with the flexibility of a prototyping control unit. Or, in other words, a prototyping platform that can be used directly in series production and adapted quickly and cost-effectively if required.

Less is sometimes more

Because components are not equipped with unused functions, the *PROtroniC TargetLINE* can be used to optimize costs accordingly in early phases with medium quantities.

The remaining functions are retained and the user can continue to use his/her function software without any adjustments.

From development control unit to individual series solution

Another option to derive an individual ECU from the standard version is to add new, application-specific functions. The function block-based concept of the **PROtroniC** TargetLINE is used for this purpose.

This new control unit can be delivered turnkey ready with individual customer data and documentation directly into the application.

Customizing options of the PROtroniC TargetLINE



Customizing option #1: Partial equipment

- Components are not equipped with unused functions
- Remaining functions are retained
- Functional software can be reused without adjustments



Customizing option #2: Adjusting functions

- Addition of new, application-specific functions to function blocks of the standard variant
- Delivery of the new control unit turnkey ready with i ndividual customer data and documentation

Overview of the hardware architecture and features of the PROtroniC TargetLINE

The PROtroniC TargetLINE at a glance

Overview	PROtroniC TargetLINE
Concept	Generic Vehicle Control Unit designed as vehicle, hybrid or powertrain master ECU
Features	Robust, compact and and fully automotive proven (LV124 @12V und ISO16750 @24V)
Functional Safety	Designed for ISO 26262 ASIL-D requirements for functional safety
Interfaces	Ethernet , FlexRay, CAN, CAN FD and LIN
I/Os	Extensive analogue and digital I/Os
Power Output Stages	Numerous software configurable power output stages available
Hardware	Adaptations using FPGA technology
Housing and Connectors	Use of qualified components for the automotive industry



Schaeffler Engineering GmbH

Gewerbestrasse 14 58791 Werdohl Germany www.schaeffler-engineering.com info@schaeffler-engineering.com

In Germany: Phone 02392 8090 From other countries: Phone +49 2392 809-0

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