

Easy 820 controls the working pressure of mobile high pressure washers



Falch Hochdruckstrahlensysteme GmbH is a company based in the Swabian town of Merklingen. The company produces high pressure washers for working pressures from 100 to 2000 bar. The T20 is the latest system. It produces a water jet speed of over 2100 km/h. These mobile high pressure jet systems are primarily used for cleaning and renovating.



Water jets offer an economical and environmentally-friendly alternative. Water jet cleaning using Falch's high-pressure technology is used wherever new application fields are involved, in which the cutting performance of conventional machines is insufficient or where the performance in manual operation is uneconomical.

It is primarily used for cleaning and renovating.

Cleaning

- Paint removal from metals,
- Rust removal from steel surfaces without the use of blasting agents,
- Cleaning tasks in industrial applications, such as the cleaning of tanks and tubes.

Renovating


- Fast and careful removal of old paint coatings on concrete,
- Cleaning of concrete surfaces,
- Concrete removal, such as for bridge renovations,
- Concrete refurbishment, such as for exposing steel reinforcements

The tasks listed can all be carried out with water jets in an environmentally-friendly and economical way. Furthermore, this is possible without any auxiliary media and chemical additives as is otherwise required with other processes. The working pressure required varies between 100 or 2000 bar, depending on the application at hand. The working pressure and flow rate are proportional to the speed of the high pressure pump, which is driven by a diesel engine. The 400 litre water tank integrated in the T20 makes it possible to treat test surfaces without the need for an external water or power source.

Automation with the EASY control relay

The pump speed is controlled by Moeller's easy800-DC-RC control relay with an easy620-DC-TE expansion unit. The required working pressure can be set directly on the device via the integrated operator and display elements. From the preset value and available parameters the control relay calculates the

easy800: the elite control relay series



Technical features

- 12 inputs, 6 relay or 8 transistor outputs
- Up to 4 analog values (10-bit resolution)
- Optional analog output (10-bit resolution)
- Integrated display (up to 32 user-defined text or signal outputs)
- Frequency measurement, incremental encoder evaluation
- Special inputs for fast, reliable evaluation of pulses or signals from incremental encoders (with 90 ° offset signals)
- Arithmetic and data function blocks
- Value comparison in 32-bit format
- Integrated network interface, up to eight easy800s can be networked (320 I/O points)

The easy800 control relay combines virtually all the features of a PLC with the simple handling of the widely known Easy product range. Thanks to the integrated networking capability with up to eight devices, easy800 can be used to implement applications with up to 300 I/O points. In this case, the control system is implemented on a single, local program or on several programs distributed amongst the devices. The network can cover distances of up to 1,000 metres. Network modules (Profibus DP, CANopen, DeviceNet, AS-Interface) enable users also to integrate the control relay easily in higher-level automation concepts.

The outstanding price/performance ratio of easy800 offers a genuine alternative to conventional automation solutions.

speed setpoint for the control device of the diesel engine. The actual pressure value is measured in the high pressure section of the system and is fed back to the control relay for controlling the speed. All the signals are analog 0...10V signals. The control relay likewise monitors limit values such as maximum and minimum pressure and switches off the system if necessary with the appropriate error message.

The text display integrated in the control relay provides the user with information about the set and actual pressure, the flow rate per minute, the current engine speed – measured via high-speed counter inputs – as well as the operating hours of the systems. The program section also monitors the switching elements of the high pressure pistol and evaluates the relevant monitoring signals of the engine control device. If an error is detected in the activation of the high pressure pistol, such as a cable break, an earth fault or short-circuit, or if it detects one in the motor control, it automatically switches off the system with the

appropriate error message. This increases operational safety and reduces downtimes. An additional frost protection program is provided to protect the pump section from damage caused by freezing.

Conclusion

Thanks to a wide range of integrated functions, the use of Moeller's easy800 control relay makes for space-saving and simple automation solutions at an attractive price. The uncomplicated programming in ladder diagram can be carried out on the integrated display or using the programming software. The integrated analog technology, the wide range of functions, a multi-lingual menu guidance in the text display and Moeller support for program development were some of the selling points why Falch chose the Easy 800.

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