

easy Relay Controls Satellite Centrifugal Finishing Machine

Finishing machines at Polyservice have a simple and durable design as well as a flexible structure. The form and quality of the parts, as well as the type of finishing, determine which plant and which process engineering application is to be used: rotary and microvibrators, satellite and centrifugal disc systems, as well as sieve vibrators and drying centrifuges can be operated individually or in combination. The Polysat5 satellite centrifugal finisher from Polyservice uses cost-efficient components from Moeller such as easy800, electrical switching devices (FAZ, DIL, RMQ), operator panels and frequency inverters.

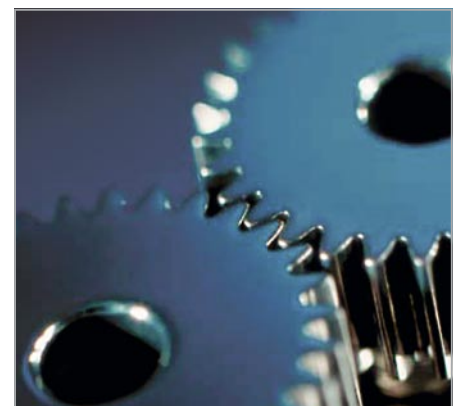
THE COMPANY

Polyservice AG is based in Lengnau, Switzerland, with global operations in the field of surface treatment. It offers total solutions for all aspects of deburring and polishing small and precision parts in bulk material. The product range includes various types of mass finishing machines such as rotary vibrators and microvibrators, satellites and centrifugal systems, as well as sieve vibrators and drying centrifuges.

The Polysat5 satellite centrifugal finishing machine integrates four finishing stations with a nominal volume of five litres. The machine was designed for deburring and polishing small and precision parts in bulk material.



Polysat 5 is used by a wide range of industrial branches such as in the clock industry (parts of wrist bands) or in medical technology (implant screws, dental technology). However, the automotive suppliers (axles, shafts, gear



wheels) or the electrical industry also use the satellite centrifugal finishing machine.

Polysat5 finishes coarser parts than conventional finishing machines or vibratory finishing

machines. Due to the higher pressure possible, Polysat5 can be used for very hard objects such as ceramics, porcelain, sapphire, hard metal. Depending on the type of consumables such as grinding media, abrasive products and chemical finishing additives, the following effects are possible: grinding/breaking edges, deburring, surface treatment or polishing.

Thanks to Moeller technology Polyservice is now able to implement a low-cost programmable machine control system. This enables users to store different finishing process with up to five processing stages and to call these up quickly when required. This was not possible with the previous standard solution using a programmable timer with operating buttons.

Machine control astonishingly simple

The MI4 operator panel is connected to an easy822-DC-TC via a programming interface. The analog output of the easy device controls the speed of the main motor. Drive belts are used by the motor gears to drive the different containers of the machine. For Polyservice, the combination of easy800 and MI4 operator panel is an astonishingly simple solution that fully meets all the requirements specified.

In addition to the basic functions such as counters, analog value comparators, time switches and many others, the easy800 also offers function blocks such as PID controllers, arithmetic function blocks and value scaling. easy800 features twelve inputs, six relays or eight transistor outputs. Mathematical tasks or value comparisons in 32-bit format are no problem for easy800. Up to four analog values with a 10-bit resolution can be measured by all devices with a DC power supply. High-

speed pulses or signals from incremental encoders with 90 degree phase shifted channels can be processed correctly and reliably by DC variants.

Optimally designed for machine control, easy800 also offers all the technical features required to implement applications in industrial or building automation and plant construction. For example, a pluggable memory module enables the easy circuit diagram to be copied without a PC. In this way, any later modifications required can also be carried out externally. The selectable startup behaviour ("run" or "stop") when the power supply is switched on also simplifies commissioning. A short-circuit detection also enables selective disconnection in the event of a short-circuit or overload.

With easy800, applications with over 300 I/O points can be implemented thanks to the possibility of networking up to eight devices via easyNet. The control can be implemented either using a single local program or distributed over several devices. The network can cover distances of up to 1000 metres. Control relays of the 600 and 800 series can be integrated in higher-level automation concepts using network modules.

Starting and controlling – without training

Moeller control relays are all designed for simple operation and maximum user convenience. easy800 is also programmed in ladder logic: like in a conventional circuit diagram, users can wire break contacts, make contacts and contactor coils using a programming pen. In addition to circuit diagram entry directly on the device, users benefit from the convenient easySoft programming software. This

provides the function block diagram view for more complex functions such as mathematical operations or the processing of values from incremental encoders. The software also includes all the well-established features such as complete offline simulation, the 16-channel oscilloscope or the documentation of the circuit diagram including cross reference list. They are available for download free-of-charge from the Internet. easySoft can be used to configure, program, simulate and commission all the devices of the easy500, 700 and 800 series.

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CONCLUSION

The continuous further development of the easy range at Moeller was a critical factor for Polyservice since all the products used in its own machines have to be state-of-the-art. Other essential criteria for Polyservice were the simple handling of the solution and the close and competent support, when required, from Moeller's controller supplier Elpex AG, based in Grenchen/Burgdorf. The quality of the product is also impressive: according to Polyservice, no downtimes due to faulty electrical components have occurred since using these robustly designed products from Moeller.



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