

Through Thick and Thin

xStart Brings Cutting Machine Up To Speed

The HSC machines developed by Rödgers in Lower-Saxony first went into operation over 15 years ago. This was also the case with the software, which enabled a connection between HSC cutting machines and 3D-CAD/CAM. Rödgers HSC machines still continue to set high standards worldwide in terms of precision, dynamics and control technology. To achieve this and to maintain its technology leadership, Rödgers continuously further developed its HSC machines. It thus soon became clear to those responsible at Rödgers that xStart switchgear with its tool-less plug connectors offers considerable benefits compared to the previous wiring solutions. As xStart meets all national and international requirements, there were no objections to installing it in the HSC machines which are sold worldwide.



Plug connections not screw connections

xStart switching devices replace conventional wiring with pluggable main and control current connections. While motor starters were previously connected with cables or bridges between motor-protective circuit-breaker and contactor, contact is now implemented by means of mechanical plug-in modules – combining motor-protective circuit-breakers and contactors up to 15.5 A into stable units. The entire unit is then simply snap fitted securely onto a top-hat rail.

Compact starters have been available in a unit for a long time. However, these kinds of special systems have a switch drive that is not identical to the standard individual contactors in use. Moeller's new tool-less plug connectors allow standard individual contactors and motor-protective circuit-breakers to be used. Only the correct connection kit is additionally required although the savings achieved by this considerably cancel out the cost. All conventional wiring options are retained since conventional connection terminals are provided on the switchgear in addition the plug connectors.

Tool-less mounting

The new plug connectors are mounted without the need for any tools. A removed plug connector also acts as a clear isolating gap. Furthermore, no wiring means no errors. The benefits of tool-less mounting can be clearly seen on the reversing starters that Rödgers uses on its HSC machines. This uses a wiring kit which contains additional electrical and mechanical connections for the additional reversing contactor. The electrical interlocks are therefore also provided via the integrated break contacts of the reversing starters in addition to the main circuit connections. When creating star-delta combinations with the plug connection technology, the use of the plug connections for main circuit and control circuit also proves to be considerably better than conventional wiring.

With only four frame sizes, xStart is able to cover a rating range up to 170 A. Three different mounting widths (45 mm up to 38A, 55 mm up to 72A and 90 mm up to 170 A)

ensure optimum packing density. The coil terminals of the contactors are arranged on the front, like the main circuit terminals, thus considerably simplifying a wiring test. The HSC machines made by Rödgers use both AC and DC actuated contactors. DC contactors in the range up to 65 A normally have a larger mounting depth than AC contactors. Not so with Moeller, since the DC contactors have the same dimensions as the AC versions.

xStart contactors offer other practical features in the series. For example, knurled contact surfaces ensure reliable contacting with auxiliary contacts. A suppressor circuit

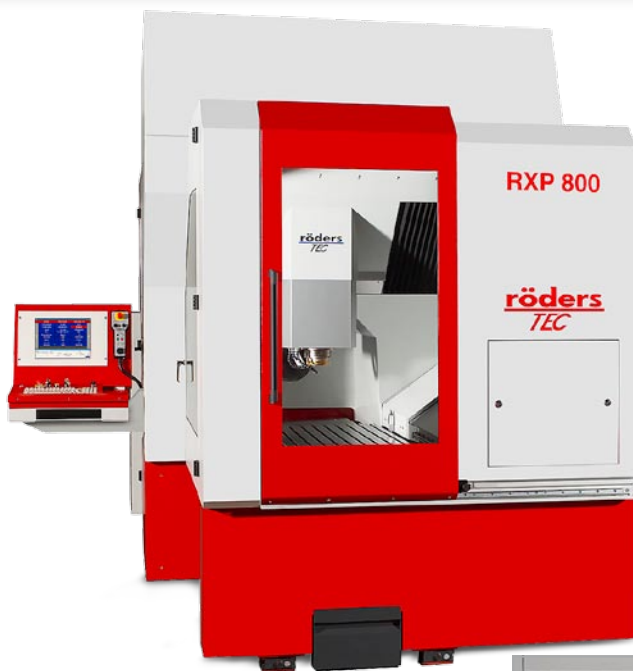


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THE COMPANY

Röders GmbH has been run by the founder family for six generations and now operates in three business fields: Machines for high speed cutting, blow moulding for PET bottles such as household items and items of daily use with sophisticated designs made from tin. The company headquarters is in Soltau, Lower-Saxony, and has a reputation for its new developments, as well as for the high intrinsic value and long service life of its products. (www.roeders.de)



integrated on the DC actuated contactors reduces transient voltage peaks. Motor filters and other auxiliary contacts, as well as accessories can be plugged simply onto the contactor from the top, and all the required openings are perfectly enclosed. Electronic circuits created by the user can also be positioned on the contactor using solder pin adapters.

Energy-saving contactor drives

The DC sealing power is only 0.5 to 2.1 Watts for all contactor drives from 7 to 170A. Contactors up to 38 A can be controlled directly from the PLC, thus eliminating the need for coupling relays. The low sealing power of the contactors allows a higher packing density and enables the use of smaller 24 V DC power supply units for the control current. This firstly optimises the space requirements in the switch cabinet and secondly reduces the heat that has to be removed by means of fans or climatic units.

Customer-friendly ordering

Moeller offers xStart in different versions: With orders in the range up to 38A, customers state whether a make or break contact should be integrated as an additional auxiliary contact. The normal combination options with two or

four-pole auxiliary contacts are also possible. Customer options are also available with regard to connection design: Box terminals with two separate chambers are available as standard. Alternatively, screwless spring-loaded terminals can be provided on all auxiliary terminals and the main current terminals up to 12 A. These also have separate openings for two cables each.

SmartWire – connecting instead of wiring

The plug connectors for Moeller's xStart don't just end with the tool-less plug connection technology. Following the "connecting instead of wiring" principle, SmartWire replaces conventional control circuit wiring between the switchgear and the I/O modules of the PLC. A SmartWire module is simply plugged onto the conventional contactor and all SmartWire modules are interconnected with a pre-assembled SmartWire cable. Communication with the controller is then implemented with a CANopen or Profibus gateway. SmartWire reduces costs for I/O modules, mounting, wiring and design engineering, as well as completely excluding wiring faults.



CONCLUSION

Sven Hofhammer, responsible for panel building at Röders summarises: "Moeller supplies contactor and motor-protective circuit-breaker combinations assembled from the individual xStart devices, such as motor and reversing starters, factory-shipped as a completely mounted unit. This shortens mounting and wiring times and offers us stockkeeping and planning benefits in equal measure. Complete units can be managed in our series machines with only a few order types required. For years, Moeller has offered us high quality service, reliable consulting and logistics."

Quicklink ID:

MS1710

Moeller GmbH
 Hein-Moeller-Str. 7-11
 53115 Bonn
 Fax: +49 (0)228 602-2275
 E-Mail: info@moeller.net
 Internet: www.moeller.net



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