



Roadheader Starter 2.0

Smart Switchgear

for Mining & Tunnelling

Roadheader Starter 2.0

TECHNICAL DATA

With its extremely wide range of functions, this innovative system offers huge benefits in terms of safety, productivity and reliability. Furthermore, RS 2.0 comes with radio remote control and the necessary solenoid valves for the hydraulic controls, as standard.

MAIN SPECIFICATION	
Voltages	500V/660V/690V/950V/1000V/1140V
Control voltages	24VDC 10A / 24VDC 20A /1x42V
Frequencies	50Hz/60Hz
Weight	1400 kg
Current	300A /500A
Standardisation	I M2 Ex d [ia/ib] I Mb IBExU14ATEX1294 X
No. of motors	4 (6)

Intrinsically Safe Inputs

5 ports are available for intrinsically safe inputs, each of which can be allocated separately. There are 4 analogue input (AI), 4 temperature (AI-RTD), 8 digital input (DI), 8 digital fail-safe (F-DI) and 4 analogue fail-safe (F-AI) cards available. The digital inputs can also be used for NAMUR sensors or, alternatively, inductive or capacitive sensors (INI's).

The standard allocation is as follows, but can be adapted to suit customer requirements:

SELECTION	8 F-DI	8 DI	4 AI	4 F-AI	4 AI RTD	4 DO
Port 1	1 X					
Port 2		1 X				
Port 3			1 X			
Port 4			1 X			
Port 5					1 X	

Alternatively, 4 output cards (DO) rated DC 23.1V / 20mA can be used instead of the input cards.

Motor Outputs

The RS 2.0 is designed to operate one cutter motor, one power pack motor, one or two chain conveyor motors and one or two belt conveyor motors. For the two belt conveyor motors, a reversing contactor is built in, through which you can choose the direction of rotation of the motors.

VOLTAGE	500 V	660 V/690 V	1000 V/1140 V
Cutter motor	Max 200 kW	Max 250 kW	Max 250 kW
Power pack motor	Max 110 kW	Max 160 kW	Max 160 kW
Chain conveyor motor (s)	Max 110 kW (2x55 kW)	Max 160 kW (2x80 kW)	Max 160 kW (2x80 kW)
Belt conveyor motor (s)	Max 110 kW (2x55 kW)	Max 160 kW (2x80 kW)	Max 160 kW (2x80 kW)

Thermal protection of all the motors via PTC is included as standard. The motor controllers also include the facility to individually set stalling and cooling times.

Intrinsically Safe Outputs

There is one output available for a signal horn (rated 11.4V Uo / 340mA) and a further output for up to two intrinsically safe flash lights (rated 10.9V DC / 75mA and/or 10.9V DC / 45 mA respectively). The package includes one horn and one flash light as standard.

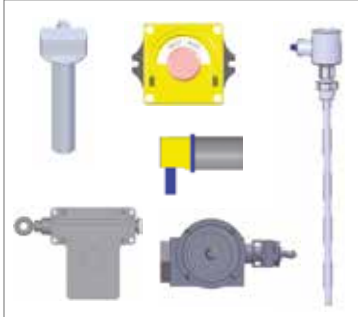
Hydraulic Valve Control

The RS 2.0 is capable of controlling up to 16 proportional solenoid valves. The system monitors and evaluates both the functionality of the valves and the position of the spools. The standard delivery scope includes the solenoid valves – Information regarding pressures, oil quantity and hose size must be indicated in advance.

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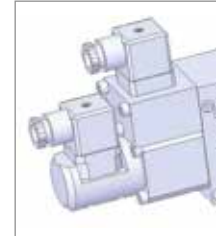
GRAPHIC OVERVIEW

INTRINSICALLY SAFE INPUTS



Remote control

- via cable
- via radio



Proportional valve with hall sensor

SWITCHGEAR

Key Features

- Smart diagnostic
- Condition monitoring
- Max. machine performance



Key Hardware Components

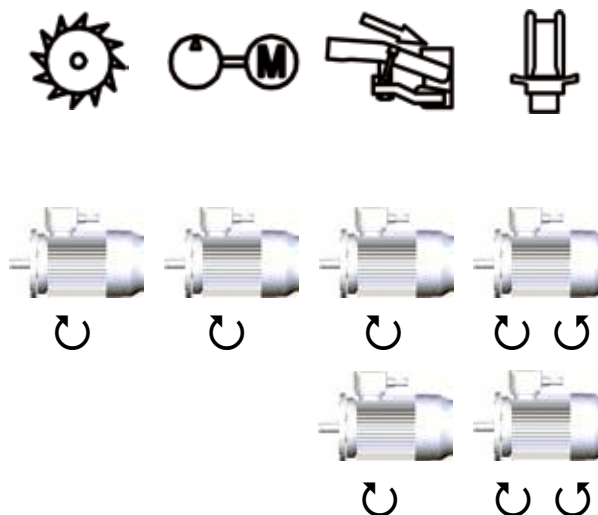
- Switchgear
- PLC & Drive Controller



INTRINSICALLY SAFE OUTPUTS



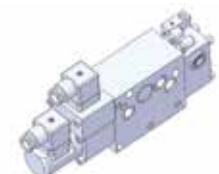
MOTOR OUTPUTS



VALVE CONTROL



↓
16 x



Roadheader Starter 2.0

SCOPE OF SUPPLY | MAIN DIMENSIONS

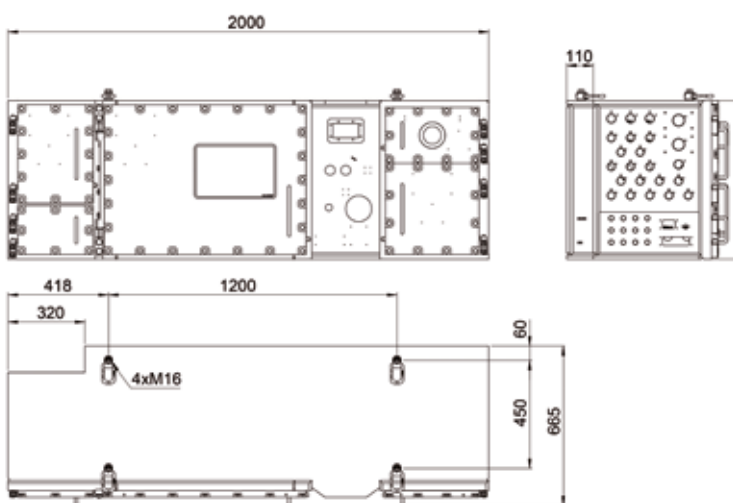
SWITCHGEAR RS 2.0

BUS-based couplers allow diagnosis of the cabling and sensors. The RS2.0 has an F-CPU and a central database, therefore ruling out any software problems. Thanks to the integrated remote maintenance module, it's almost as if the technician is right there with you.



MAIN DIMENSIONS

The station consists of one complete welded part, making it extremely warp-resistant and resistant to vibrations. There is a large 15" monitor in the main room, on which the description, wiring diagram, status information and computer animations can be called up. Using connection rooms keeps the technology in the station free from dirt. Their clever design means that all components can be reached easily.



REMOTE CONTROL AND VALVE BLOCKS

A photorealistic image of the radio transmitter on the 15" monitor makes troubleshooting seem like child's play. Due to the comprehensive installation of Hall sensors, the control system can adapt the hydraulics actively to the working process. Installed opto-isolators limit any damage that occurs locally. Thanks to dynamic earth-leakage monitors, earth leakages can be detected and eliminated before a shutdown. As a result of restriction to two control voltages, potential problems are a thing of the past.



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