



ScanControlUnit (SCU-3)

The SCU-3 is a control unit for scanning optics used in the implementation of remote laser applications. The system can be used for stationary (fixed scanner) and dynamic (moved by industrial robot) applications. In dynamic systems, the robot and scanner movements can be synchronized by the SCU-3 resulting in full 9 axis coordinated motion (on-the-fly application). The system consists of a control cabinet, the user software and an optional control panel.

SCU-3 Control Cabinet (19" rack)

The SCU-3 is designed as a compact PC control system and controlled by a separate mobile Human-Machine-Interface (HMI). The separation of the control unit and HMI allows remote placement of the PC control cabinet. The hardware components of the SCU-3 are arranged in well-defined 19" racks. This enables a high degree of customization based on customer needs, as well as easy local exchangeability of the modular design. Therefore, a subsequent upgrade of the functionality can be easily done by adding and/or changing modules. The interruptible power (UPS) ensures that the system is shut down in a controlled manner in case of a power outage.

Human Machine Interface (HMI)

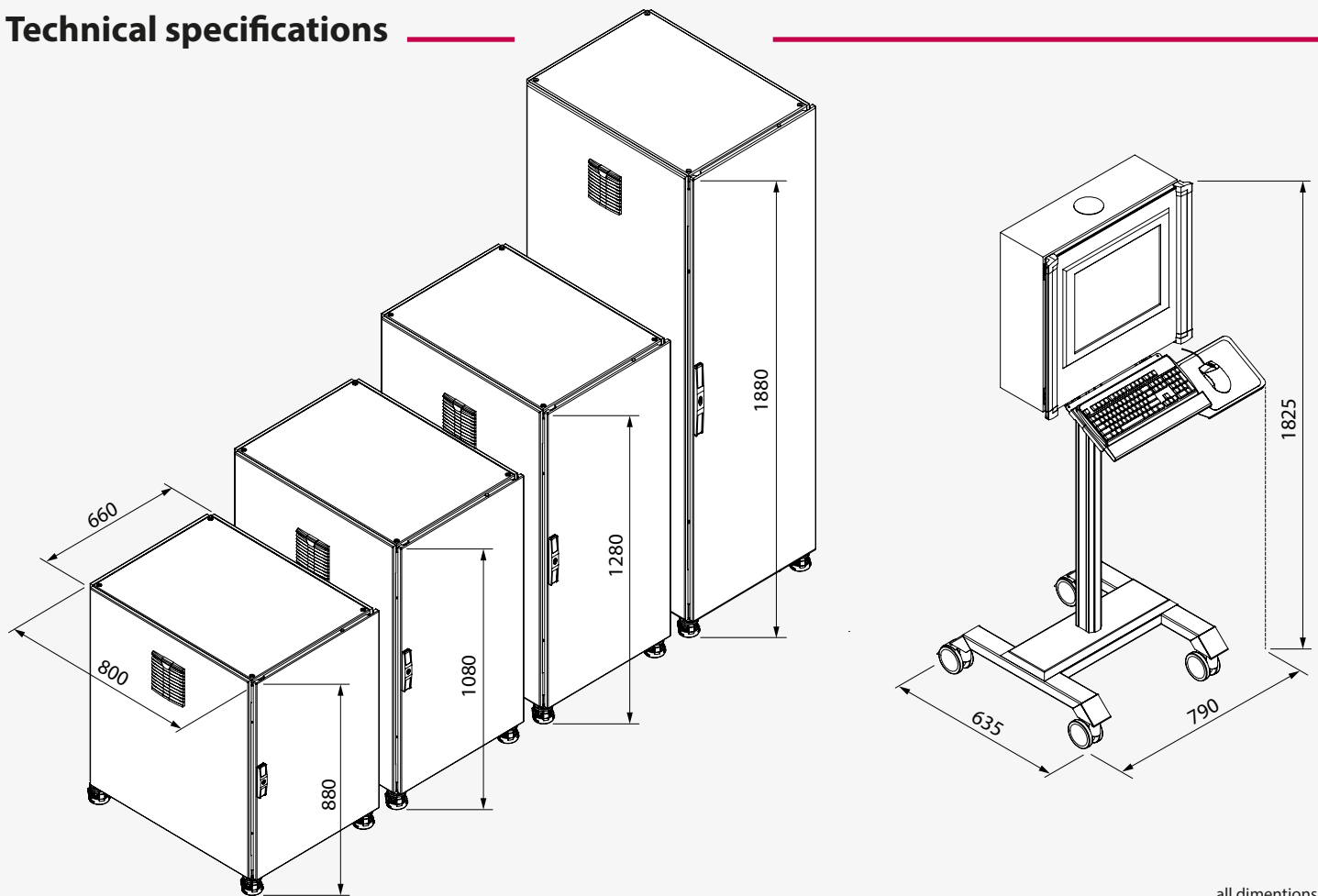
The mobile control panel HMI, which includes a 19" monitor, keyboard and mouse, allows convenient installation at the workplace for programming and monitoring the scan system.

RSU User Software

The user software is used for programming, control and monitoring of the welding process. Effective programming of the welding job is ensured through an intuitive user interface. The user can process the work piece with the robot program both on the basis of CAD files (STEP / IGES) and through an intuitive conventional teach-in process.

In addition to the processing geometry, various parameters can be controlled along the scanning process path in 3D, allowing highly accurate control of parameters including the laser power, travel speed, defocus and oscillation during operation. On-the-fly processing can be used to optimize positioning coordination between the scanner and robot, minimizing cycle time. Thus the SCU ensures optimal interaction of the scanner, laser and robot, enabling a dramatic reduction of the cycle times over conventional processing methods.

Technical specifications



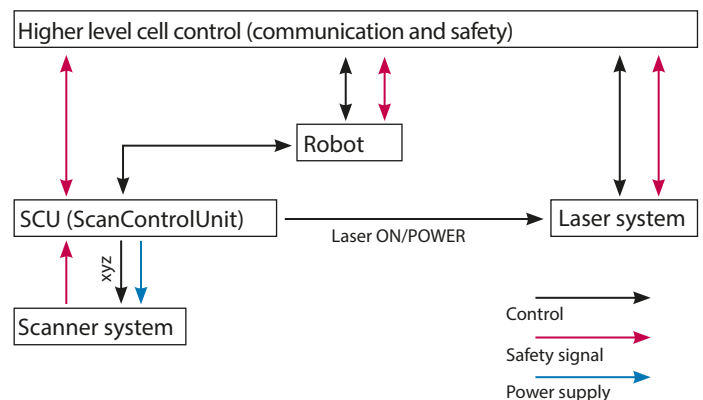
all dimensions in mm

Technical specifications SCU-3

Dimensions				
Length	800 mm			
Width	660 mm			
Height	880 mm (15 HU)	1080 mm (20 HU)	1280 mm (24 HU)	1880 mm (38 HU)
Weight	approx. 200 kg			
IP rating	54			
Power supply	100 - 230 V, incl. UPS			
Language versions	DE / EN			
Available interfaces				
Scanner control	X, Y and Z axis movements XY2/100, 16 bit resolution SL2/100, 20 bit resolution			
Laser	Power control via analogue voltage IPG, LASERLINE, TRUMPF, ROFIN, and others			
Robot	integration packages, incl. on the fly interface available, for: ABB, FANUC, KUKA, YASKAWA MOTOMAN			
Bus communication	DeviceNet PROFIBUS PROFINET RT			
Safety interface	Hardwired Profi safe (based on PROFINET RT) DeviceNet safety			

Technical specifications Operation Terminal

Dimensions	
Length	635 mm
Width	790 mm
Height	1825 mm
Weight	30 kg
IP rating	55



In a laser system, the SCU is integrated into the safety circuit of the overall system (interlock, emergency stop) to ensure safe system operation.

Additionally, the SCU is integrated into the controller communication system as a slave. Control of the system, such as program selection, program start, etc. is performed via a higher-level master controller, typically the robot controller or the cell controller. Numerous bus systems are available for flexible integration.

An interface to the laser source is also implemented to allow the SCU direct control the laser power to insure precise coordination with the scanner and/or robot movement.