CLOOS

Weld your way.

C-Gate IoT Platform

Modular digitisation platform for individually networked welding production

HAIGER, July 2021 - With the C-Gate IoT platform, users can access information from their welding production in real time. All information is entered and processed centrally in an integrated information and communication tool. This allows users to monitor and control their production processes down to the smallest detail. It consists of several modules which users can activate depending on their individual digitalisation strategy.

The **basic module (BS)** enables the networking of CLOOS robot systems and welding machines. With open interfaces (APIs) and standards such as OPC UA, the system can be easily and securely integrated into existing network and application environments (MES, ERP). In the basic module, the raw data of the networked devices are available as data points. Further modules enrich these with evaluations, statistics and analyses.

The **production module (PR)** enables a comprehensive online monitoring of welding machines and robot systems. Here, users have access to classic operating data with target/actual comparisons including calculation and visualisation of the system effectiveness. An integrated plan data generation supports them in determining their target values without manual entries. Shift plans and component data can be transferred from upstream systems via interface.

The **quality management module (QM)** focuses on the individual component with its production and welding process data. It allows a detailed assessment of the weld quality already during welding. For complex and chained systems, quality statements are made for each production stage in addition. The determined data are summarised in a component protocol and can be called up via the report function or via OPC-UA or REST interface. Thus, users get an optimum support for their quality management system and the implementation of welding quality requirements.

In the future, the C-Gate IoT Platform will be expanded to include a maintenance module and a program management module. The **plant maintenance module (PM)** makes it possible to plan, monitor and carry out maintenance on systems and welding equipment. With the

program management module (PG), programs can be managed centrally on all systems.

The individual modules are provided as software on a **central C-Gate IoT Hub**. This ensures secure and reliable communication between the user's IT infrastructure and the connected systems and machines. Users can optionally use the new **C-Gate IoT Connector**. This is an edge gateway that is installed in robot systems or welding machines as a data/application buffer and firewall. Existing QIROX robot systems and QINEO welding machines can also be connected to this platform.

In addition to the CLOOS products, C-Gate offers the possibility of connecting third-party devices with the help of a PLC. The PLC transmits standardised station information to C-Gate, such as the current component, the production status or possible errors. With such stations it is possible to track and log a component over a complete production chain, including loading and unloading stations on C-Gate.

Thus, C-Gate IoT Hub offers optimum conditions for the implementation of digitisation and smart factory projects.

More information: https://c-gate.cloos.de/

Photo 1: With the C-Gate IoT platform, users can access information from their welding production in real time.

Photo 2: The single modules can be activated individually depending on the application.

Photo 3: The devices can be connected either directly to the IoT Hub or to an additional IoT Connector.

CLOOS Welding technology:
Robot and welding technology from a single source

Since 1919, Carl Cloos Schweisstechnik GmbH has been one of the leading companies in welding technology. More than 800 employees all over the world realise production solutions in welding and robot technology for industries such as construction machinery, railway vehicles, automotive and agricultural industry. The modern CLOOS welding power sources of the QINEO series are available for a multitude of welding processes. With the QIROX robots, positioners and special purpose machines CLOOS develops and manufactures automated welding systems meeting the specific requirements of the customers. The special strength of CLOOS is the widely spread competence. Because – from the welding technology, robot mechanics and controller to positioners, software and sensors – CLOOS supplies everything from a single source.

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