MEGMEET
WELDING TECHNOLOGY

MEGMEET
WELDING TECHNOLOGY | Stock code 002851

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SMARC

Cloud Platform System for Smart Welding Informatization and IoT Solution

www.megmeet-welding.com

CONTENTS

Smart Welding Informatization and IoT Solution

Megmeet SMARC smart welding Informatization cloud platform deeply integrates industrial Internet technology and welding application technology, to realize functions such as fining monitoring of welding data, multi-dimensional analysis of welding data, and digital welding management. It provides a complete set of solutions for digital transformation of welding production for clients, and contributes to build intelligent factories.

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Basic Framework

SMARC System Advantage

APP   Applet

Mobile-phone APP

MES

ERP

Third-party System
API Interconnection

Cloud

Local Server   Cloud Server

Wi-Fi   EtherNet   4G

MEGMEET Welding
Machine

Operating Welder

Other Brands of
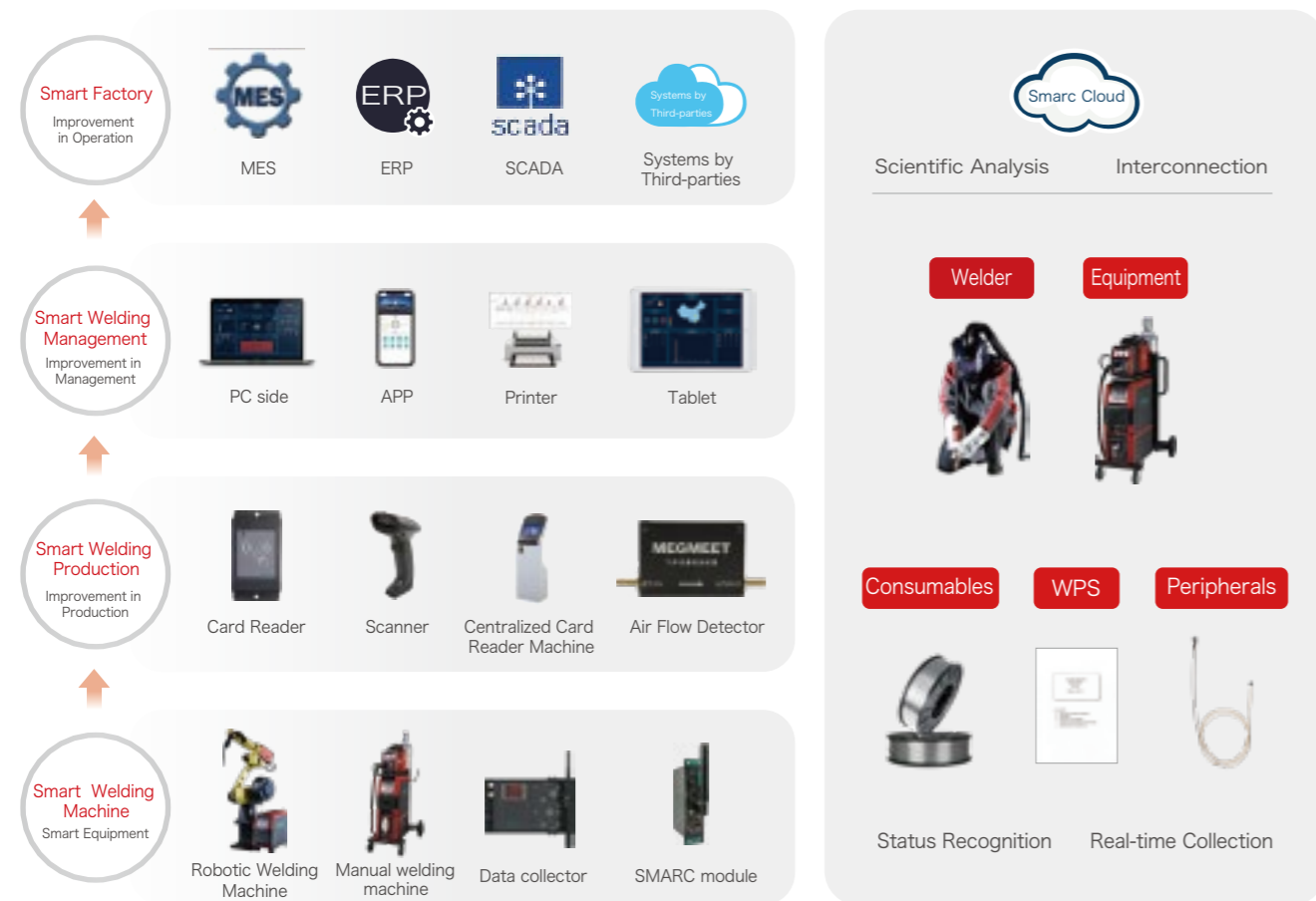Welding Machines

Welding Gas

Workpiece

Robotic Welding
Machines
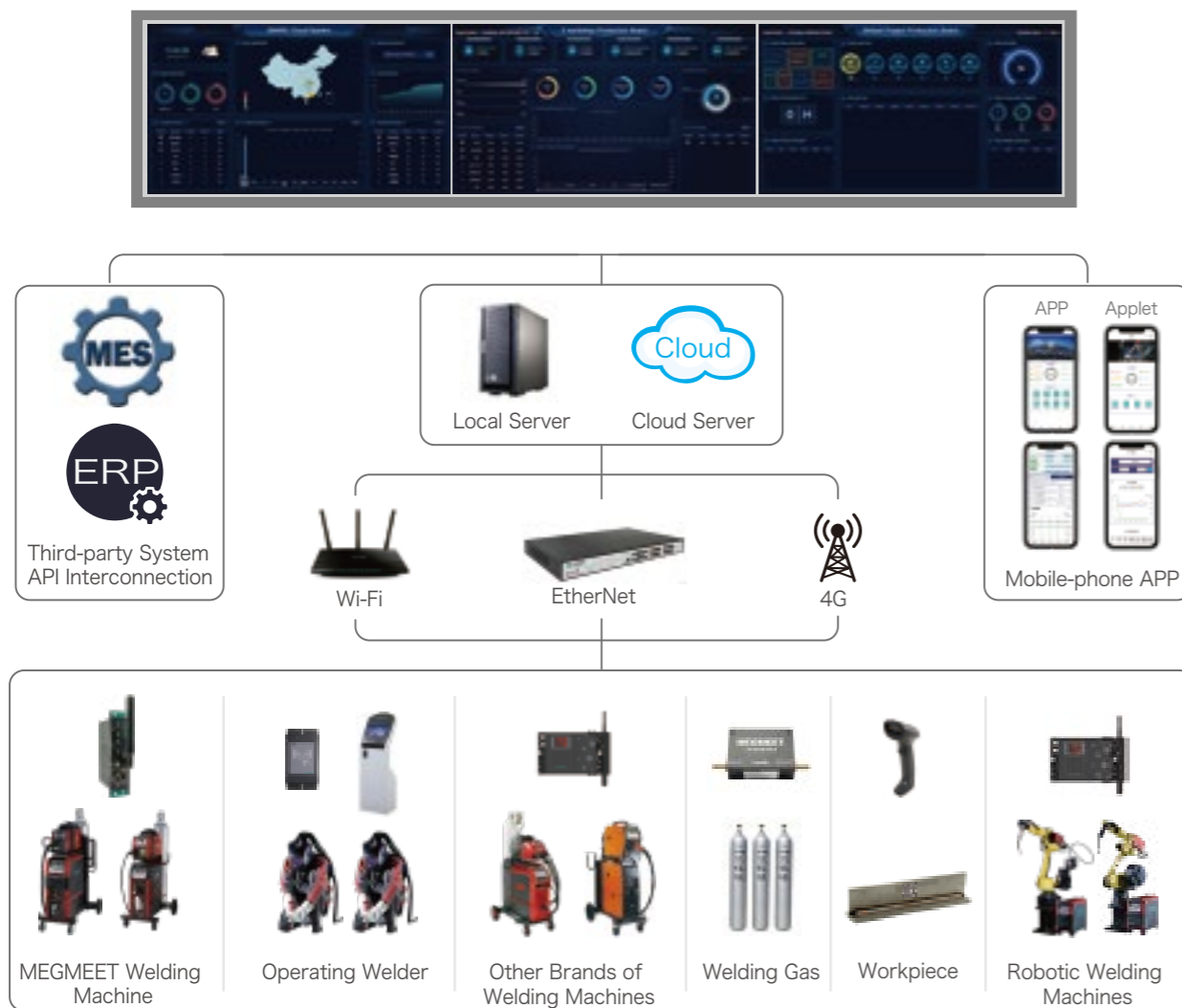
Wi-Fi, Ethernet, 4G network,
three-in-one, switched easily

Multi-dimensional dashboard
monitoring

More than 90 days of long-term
storage and resumption when
network is disconnected

Welding production project
management and task assignment
/receiving management

Workpiece to be scanned and bound, as
well as automatic matching and issuing
of WPS, welder qualification checking,
etc.

With PC terminal, APP terminal
and Applet terminal, synchronized
applications provides customized
service.

Public cloud, private cloud, local
server, three flexible choices.

Online printing and exporting of over
40 types of production statistics
reports.

Energy-saving monitoring and alarm
warnings for long standby time and
gas pipe leakage,etc.

Material in & out management
and statistical analysis of welding
consumables and wearing parts.

Monitoring, alarms and statistical
analysis of gas flow.

Standard API interface supports
open connections with third-party
system.

SMARC

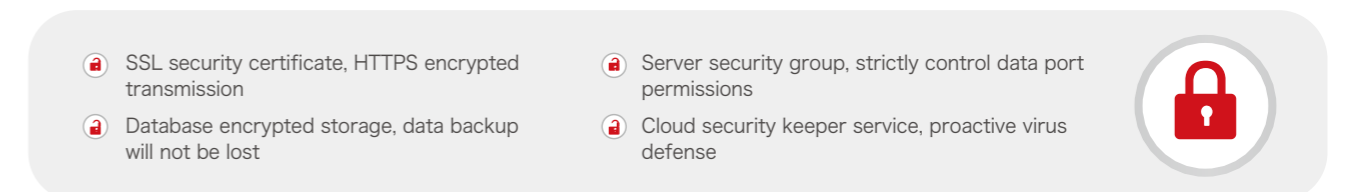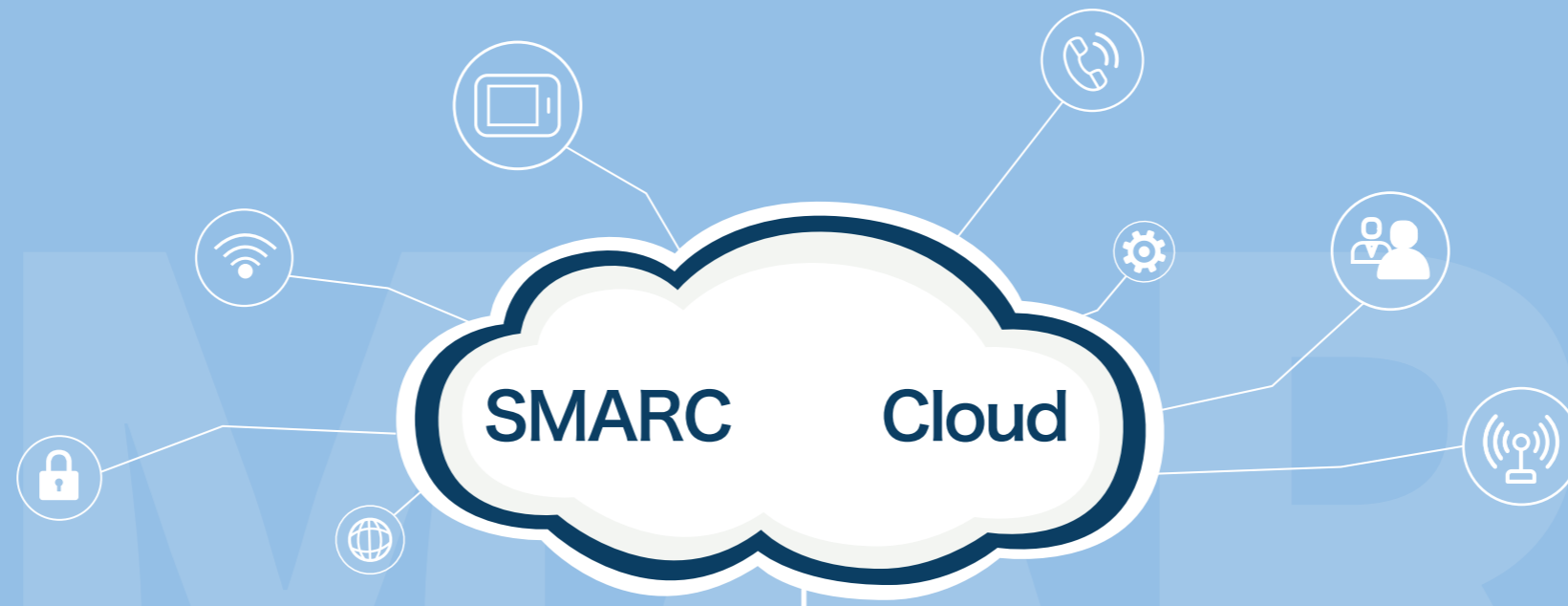Cloud Platform for Smart Welding
Informatization and IoT Solution

MEGMEET WELDING TECHNOLOGY

Solution

Smart Factory
Improvement in Operation

MES | ERP | SCADA | Systems by Third-parties

Smart Welding Management
Improvement in Management

PC side | APP | Printer | Tablet

Smart Welding Production
Improvement in Production

Card Reader | Scanner | Centralized Card Reader Machine | Air Flow Detector

Smart Welding Machine
Smart Equipment

Robotic Welding Machine | Manual welding machine | Data collector | SMARC module

Smarc Cloud

Scientific Analysis | Interconnection

Welder | Equipment

Consumables | WPS | Peripherals

Status Recognition | Real-time Collection

Customer Value

Enhance Productivity
· Welding machine real-time warning
· Synchronous solution
· Reduce downtime and increase efficiency
· Production data ranking analysis
· Welder's motivation is improved

Guarantee Production Quality
· Real-time monitoring of welding parameters
· Parameter over-limit warning prompt
· Detailed records of historical data
· WPS parameter issuing and lock
· Smart matching of work-piece and WPS

Reduce Production Cost
· Warning prompts reduces the frequency of routing inspections
· System report reduces labor amount
· Statistical analysis of production consumption
· Transparency of vulnerable part usage amount
· Saving electricity and gas to reduce costs

Improve Product Service
· Online diagnosis of failure welding machine
· Remote upgrade firmware
· New product and new function push
· Questions and needs feedback by users
· To continuously upgrade machines by Megmeet

System Security

· SSL security certificate, HTTPS encrypted transmission
· Database encrypted storage, data backup will not be lost
· Server security group, strictly control data port permissions
· Cloud security keeper service, proactive virus defense

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System Functions

SMARC Cloud

System Monitoring
- Welding Machine Status
- Welder Status
- Welding Machine location
- Standby Energy Saving
- Leakage Energy Saving
- Welding Over-limit
- Multidimensional Production Kanban

Welding Machine Management
- Welding Machine Registration
- Welding Machine Maintenance
- Welding Management
- Welding History Record
- Welding Statistical Analysis
- Machine Version Query
- Machine OTA Upgrade
- Remote Control Management

Welder Management
- Team Management
- Welder Registration Management
- Welder Welding Management
- Operation Record
- Operation Statistical Analysis
- Welder-Machine Binding Management

Warning Management
- Warning History Record
- Warning Classification
- Solution&Supports
- Warning Statistics
- Warning Analysis Report

Consumables Management
- Consumables Incoming
- Consumables Outcoming
- Welder Requisition Statistics

Production Report
- Production Power Consumption Curve
- Welding Machine Utilization Efficiency
- Welder Working Efficiency
- Wire Consumption Statistics
- Gas Consumption Statistics
- Energy Consumption Statistics
- Production Comparative Analysis
- Production Trend Analysis

WPS Management
- Qualification Management
- Workpiece Management
- WPS Information Management
- WPS Issuance
- Quality Traceability
- WPS Matching
- WPS Sharing

Project Management
- Basic Information
- Project Equipment
- Project Manpower
- Project Material
- Project Files
- Project Plan
- Project Schedule
- Project Cost
- Project Reports

Task Assignment Management
- Task Decomposition
- Task Configuration
- Task Distribution
- Task Requisition
- Task Submission

After-sales Service
- Issues Feedback
- Demands Feedback
- System Scoring
- Product Information

System Management
- Enterprise Information
- User Information
- Role Information
- Authority Information
- Enterprise Configuration
- Syslog Management
- API Interface

A New Era of **Smart**
Welding Informatization

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Dashboard Introduction

Admin Home Page

☑ Overall distribution of registered machines

☑ Real-time working status of machines

☑ Comparison and ranking of production data

☑ Real-time prompt warning, maintenance and announcement

Production Data Center

☑ Connected to MES production management system

☑ Multi-dimensional production data

☑ Production data trend analysis

Dashboard in Workshop

☑ Location distribution of machines

☑ Real-time status of production

☑ Utilization rate and energy consumption statistics of machines

System Dashboard

Applicable for Large Visualization Management

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Dashboard Introduction

Real-time Dashboard for Production

☑ Production real-time ranking list

☑ Real-time status of machines and welders

☑ Utilization rate and energy consumption statistics of machines

Dashboard for Project Management

☑ Project progress

☑ Project real-time status

☑ Project-related machines, personnel and other information

☑ Energy consumption statistics

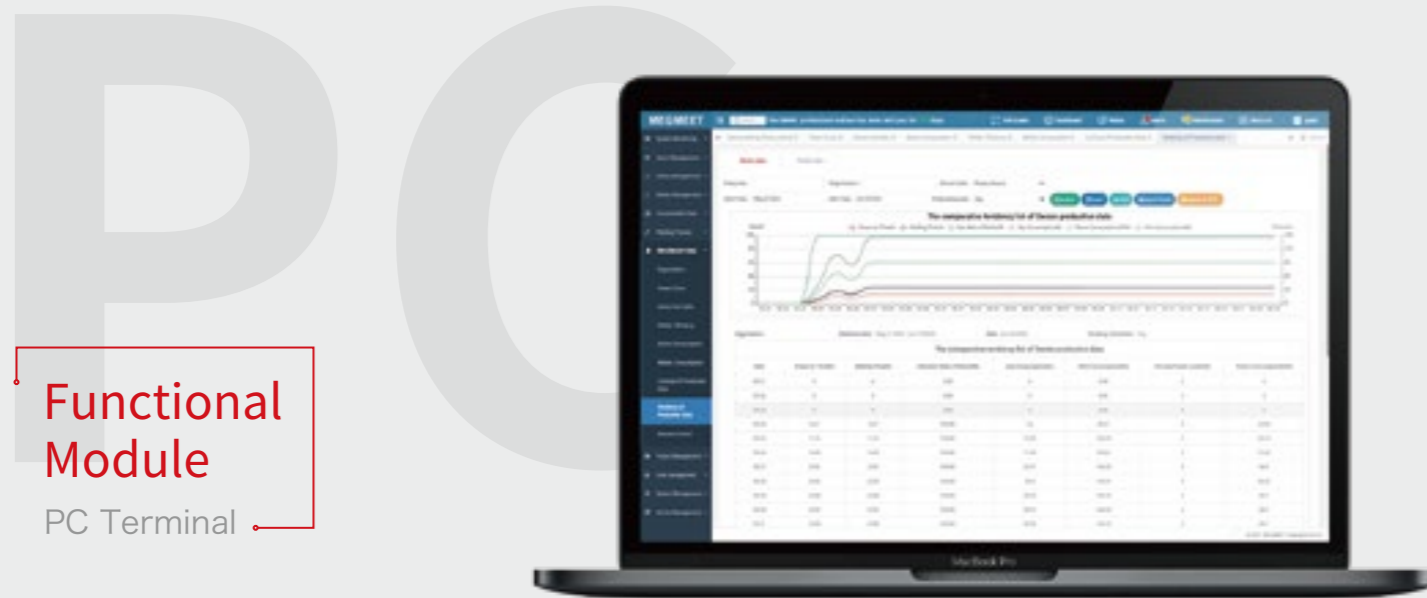### Dashboard for Machines

☑ Real-time status of machines

☑ Welder and workpiece information associated with machines

☑ Welding parameters
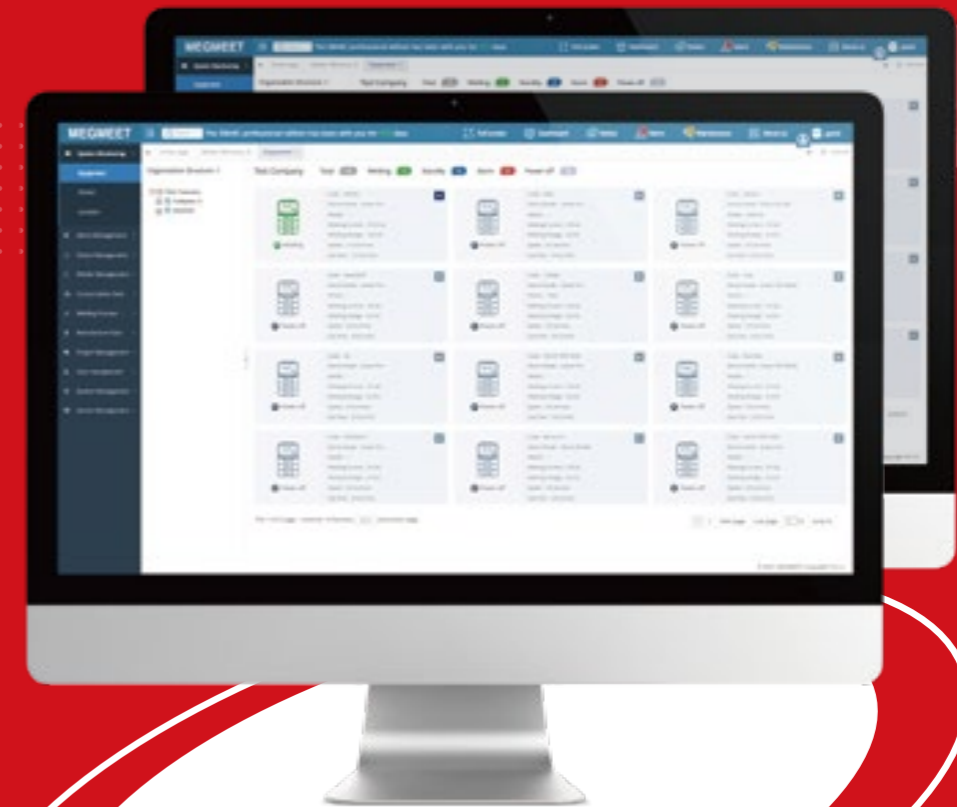
PC Terminal
Welding&Production
E-Management Expert

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Functional Module

PC Terminal

PC

Real-time Monitoring | Statistical Analysis | Quality traceability | WPS Issuance | Task Assignment

Smart Welding

Informatization Cloud Platform System

Monitoring on Welders

- ☑ Real-time monitoring on the status of welders
- ☑ View the machines used by welders
- ☑ Monitor welding parameters

Monitoring on Location

- ☑ GPS positioning of welding machines
- ☑ Real-time location of welding machines
- ☑ Visualized distribution of welding machines

Monitoring on Welding Machine

- ☑ Real-time monitoring of machine status
- ☑ View welders linked to the machines
- ☑ Welding parameters monitoring

Welding Machine Management

- ☑ Registration, operation and maintenance
- ☑ Production data traceability and statistics
- ☑ Remote upgrade

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Functional Module
PC Terminal

Welder Management

- ☑ Welder information registration and maintenance
- ☑ Welders binding with machines
- ☑ Welding data traceability and statistics
- ☑ Welders receive welding tasks

WPS Management

- ☑ WPS information base management
- ☑ Workpiece Information Management
- ☑ WPS issuance locking
- ☑ Workpiece and WPS matching
- ☑ Multi-dimensional quality traceability

Warning Management

- ☑ Warning real-time prompts
- ☑ Real-time solution&supports
- ☑ Welding parameter over-limit warning
- ☑ Warning records and statistical analysis

Project Management

- ☑ Associated with production order
- ☑ Production task distribution
- ☑ Production task review
- ☑ Project progress follow-up
- ☑ As-Built report output

Consumables Management

- ☑ Incoming record
- ☑ Outcoming record
- ☑ Statistics data

Authority Management

- ☑ Enterprise and user information management
- ☑ User roles and permissions settings
- ☑ Personalized parameter configuration for enterprise

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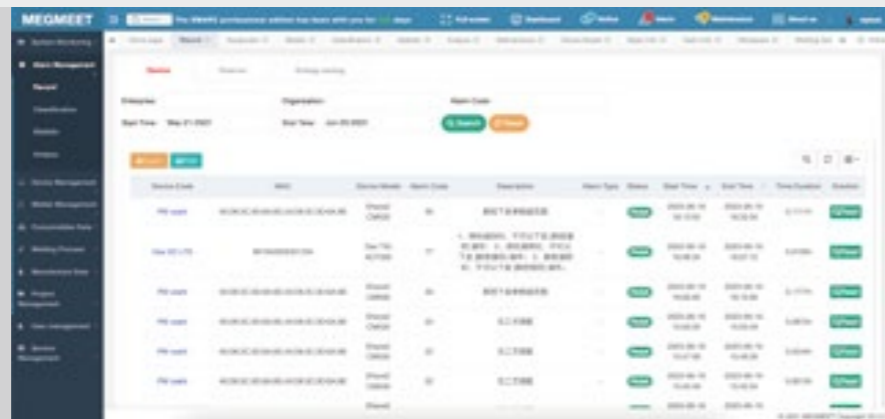# Functional Module
PC Terminal

After-sales Service

- ☑ Questions and feedback
- ☑ Online solution
- ☑ Product information lookup
- ☑ System user evaluation

Energy Saving and Cost Reduction in Production

- ☑ Gas flow monitoring
- ☑ Gas leak warning
- ☑ Daily long-time standby warning
- ☑ Gas waste reduction
- ☑ Energy waste reduction

Scan workpiece to Automatically Issue WPS

- ☑ Workpiece information maintenance
- ☑ Workpiece and WPS matching and qualification settings
- ☑ Welder qualification matching check
- ☑ Scan workpiece to automatically issue welding parameters
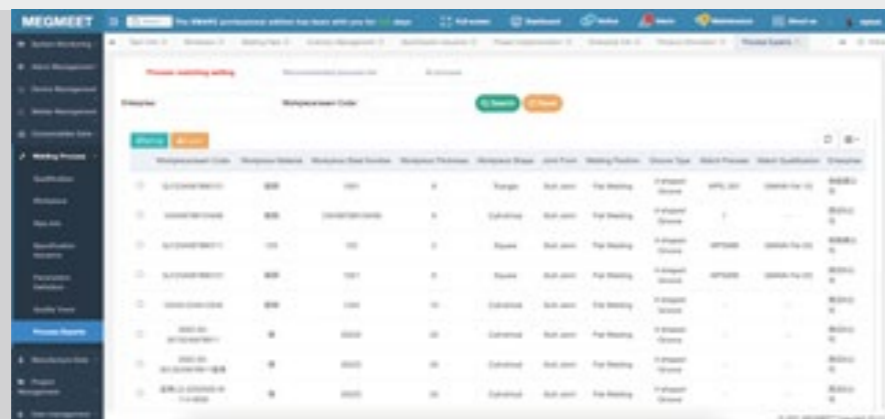
System Reports
PC Terminal

The system provides multi-dimensional statistics and analysis reports of welding production data, including production power consumption curve, equipment utilization rate, personnel operation efficiency report, wire consumption statistics, power consumption statistics, gas consumption statistics, production data comparative analysis, production trend analysis report, etc. Users can easily view and export, and make use of these reports for data analysis and traceability, providing data supports for decision-making of user and realizing digital management of welding production.

History Record Waveform

Power Consumption Curve

Machine Utilization Rate

Welder Working Efficiency

Wire Consumption Statistics

Gas Consumption Statistics

Energy Consumption Statistics

Production Data Comparison

Production Data Trend Curve

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Function Introduction

Mobile terminal of Megmeet SMARC system supports mobile APP and WeChat Applet access. Data of mobile terminal is synchronized with the data of cloud platform system in real time. Mobile terminal can monitor welding machines and welders, production statistical report lookup, welder binding with machines, welder scanning workpiece, remote adjustment of parameter by welder, welder receiving welding tasks and other functions. It is able to help users achieve more convenient remote monitoring on mobile terminal , and more efficient digital-management of welding production.

Diversified Access Methods to the System

· Android 8.0 or above
· IOS12.5 or above
· WeChat Official Accounts
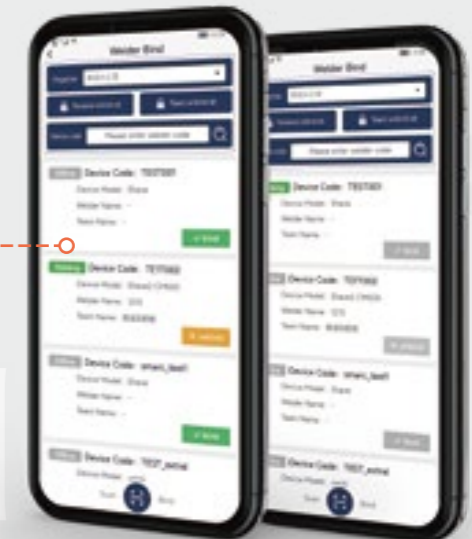
Android APP QR Code   APPlet QR Code

Functional Module

Mobile Terminal

Welder Information Is Bound With Machine

Welder information is able to be bound with welding machine by scanning code.

BINDIN

Mobile Terminal

Mobile APP/Applet

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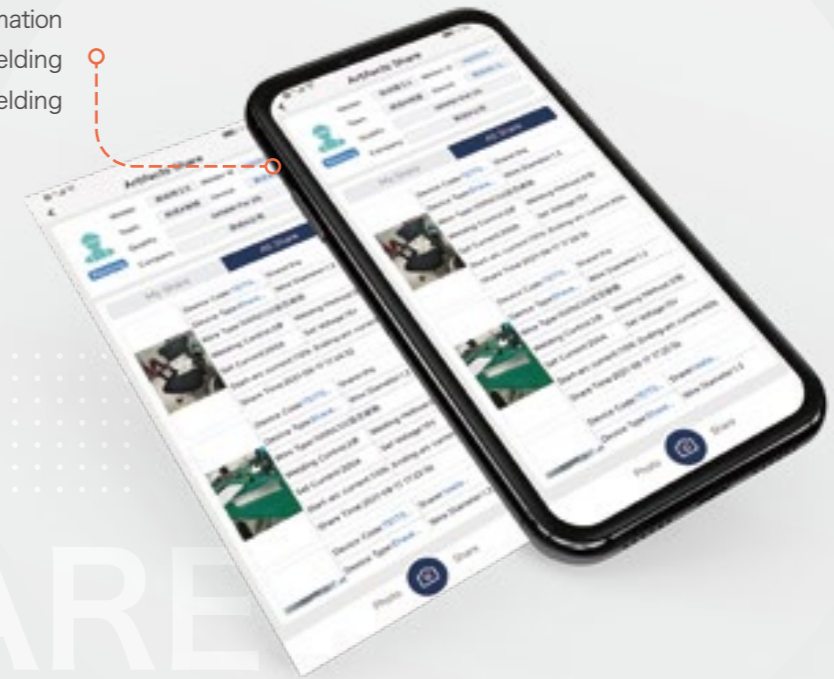WELDING TECHNOLOGY

Workpiece Scanning

Welder can scan the QR code of workpiece with mobile phone. The WPS parameters to match workpiece can be set in the system, and automatically issued and locked.

SCAN

WPS Information Sharing

Welder could share WPS information and look up each other's welding photos and corresponding welding parameters.
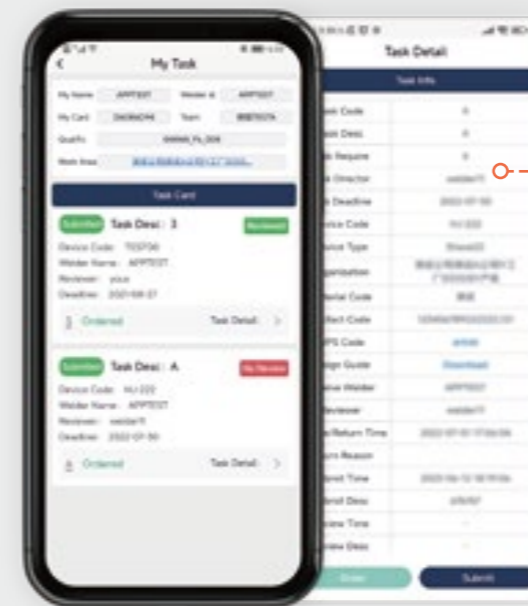
SHARE

Parameter Adjustment

Welder can remotely regulate welding current, welding voltage and other parameters.

ADJUST

My Task

Welder can receive and submit welding tasks in real time, by which, it is able to realize effective intelligent control of various information including production orders, welding equipment, welders, and operating parameters,etc.
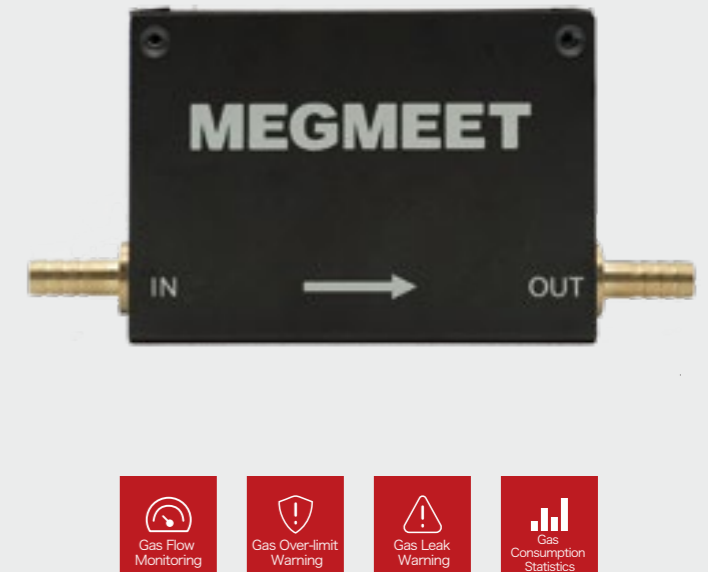
TASK

Gas Flow Detector

It is mainly used in the detection of gas flow, which can realize the functions of real-time monitoring of gas flow, alarm prompt, and consumption statistics.

· Energy Saving &Cost Reduction: Real-time monitoring of gas flow rate can detect the abnormal phenomenon of gas flow exceeding limit or gas leakage, and issue warnings.

· Quality Monitoring: Gas flow value range is set corresponding to each welding current segment, and the real-time welding gas flow speed is monitored. It give an alarm when welding gas flow exceeds limit in order to ensure welding quality.

· Energy Consumption Statistics: Welding gas consumption can be counted in the system, which provides important data basis for cost evaluation of each project.

Gas Flow Monitoring | Gas Over-limit Warning | Gas Leak Warning | Gas Consumption Statistics

Technical Specification

Product Name	SMARC-GAS FLOWMETER-BV
Detection Principle	Thermal Mass Flow Meter
Input Voltage Range	DC 8-24V
Output Communication Interface	RS485
Gas Detection	80%Ar+20%CO2
Detection Range	30L/min
Detection Accuracy	±(1.5+0.2FS)
Max Flow Pressure Loss	600Pa
Max Working Pressure	0.5MPa
Working Temperature	-20~+65℃
Storage Temperature	-40~+85℃
Working Humidity	<95%RH(No icing, No condensation)

Collection Terminal

Data Collection Applied in
Welding & Production Sites

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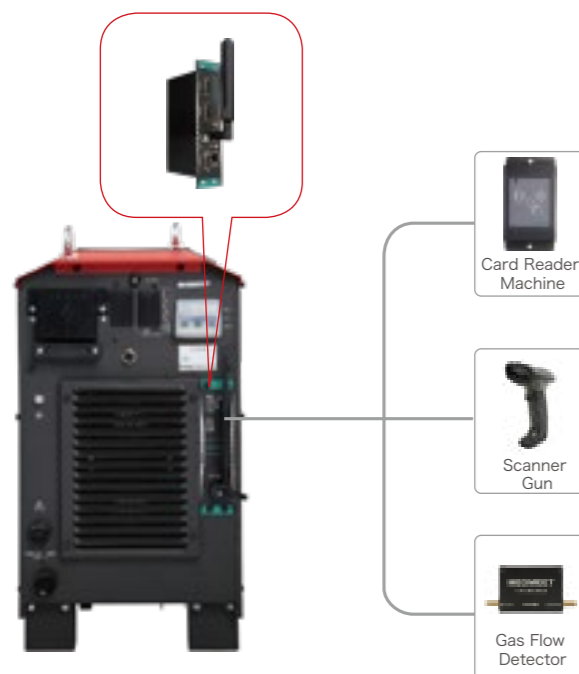WELDING TECHNOLOGY

SMARC-2S Intelligent Communication Module

It is mainly used in MEGMEET full series of welding machines. Through digital communication with welding machine, it can collect real-time welding current, welding voltage, wire feeding speed, gas flow and other data during welding process. The data accesses to SMARC cloud platform system through Wi-Fi, EtherNet 4G or other network communication methods to realize welding data collection of MEGMEET welding machine and system terminal issue instructions and parameters to welding machine, which achieves comprehensive informationization management for welding.

Features

- Applicable to all MEGMEET welding machines
- Network three-in-one (Wi-Fi/EtherNet/4G)
- Welding parameter monitoring and over-limit alarm
- Gas flow monitoring and alarm
- Welder swipes card to bind with welding machine
- Welder scans workpiece to issue WPS
- Users quickly access Megmeet SMARC system

Technical Specifications

Product Model	SMARC-2S	
Input Power	48VDC rated, input voltage range 18~60VDC	
Network Method	Network Method	Wi-Fi/EtherNet/4G
	Transmission frequency	1S
Output	Scanner gun power supply	5V
	Gas flow meter power supply	12V
	Distributed card reader power supply	12V
External Interface	RS232	Scanner gun or gas flow meter(optional)
	RS485	Distributed card reader or gas flow meter(Optional)
	CAN1 communication	Communicating with welding machine
	CAN2 communication	Reserved
	USB to serial port	Software upgrade and network parameter configuration
Canonical Channel	0~9/0~49/0~99	
Expansion Slot	1 SIM card slot (internal), 1 SD card slot (internal)	
Indicator Light	Power light, network light	
Other Functions	Resume transmission after network disconnection, OTA upgrade	
Working Environment	-40℃～+60℃	
Storage Temperature	-40℃～+70℃	
Dimensions LXWXH(mm)	158×92.9×40	
Installation Method	Card slot on the back of machine (fixed by M5 screws)	

System Composition

Card Reader Machine

Scanner Gun

Gas Flow Detector

SMARC communication module is embedded-type designed.

Multiple communication interfaces are available for flexible selection.

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SMARC-2E Welding Data Collector

It is mainly used in DC arc welding machine. Through sensors, it can collect real-time welding current, welding voltage, wire feeding speed, gas flow and other data during welding process. The data accesses to SMARC cloud platform system through Wi-Fi, EtherNet, 4G or other network communication methods to realize welding data collection of various brands of welding machines, which will achieve basic informationization management for welding.
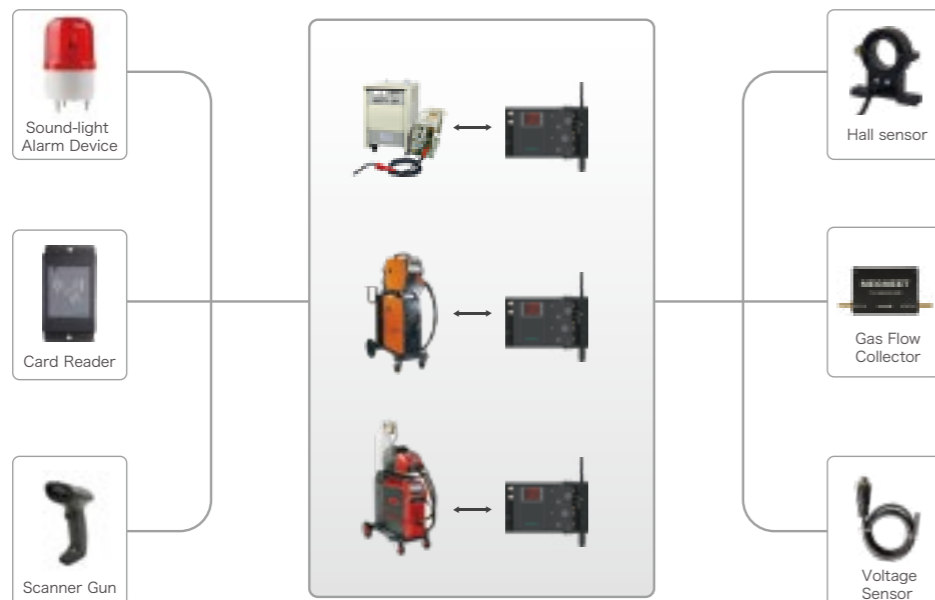
Features

- Industrial AC two-phase 380V input power supply
- Network three-in-one(Wi-Fi/EtherNet/4G)
- Welding current collection(DC 0-1300A)
- Welding voltage collection(DC 0-120V)
- Gas flow monitoring and alarm
- Welding parameter monitoring and over-limit alarm
- Welder swipes card to bind with welding machine
- Welder scans workpiece to issue WPS
- Users quickly access to SMARC system

Technical Specification

Product Model		SMARC-2E
Input Power		Industrial two-phase power 380VAC±30% 50/60HE (power from welding machine)
Information Collection	Current Measurement Range/Accuracy	0-1300ADC/1%
	Voltage Measurement Range/Accuracy	0-120VDC/±0.5V
	Current Measurement Peak	1500A
	Voltage Measurement Peak	135V
Network Method	Network Method	Wi-Fi/EtherNet/4G
	Transmission Interval	1S
Output	Scanner power supply	5V
	Gas flow meter power supply	15V
	Distributed card reader power supply	15V
External Interface	RS232	Scanner gun or gas flow meter(optional)
	RS485	Distributed card reader or gas flow meter(optional)
	CAN2 communication	Reserve
	USB to serial port	Software upgrade and network parameter configuration
Other Functions		Resume transmission after network disconnection
		OTA upgrade
Working Environment		-20℃～+40℃
Storage Temperature		-40℃～+70℃

System Composition

Sound-light Alarm Device

Card Reader

Scanner Gun

Hall sensor

Gas Flow Collector

Voltage Sensor

IOT

Different Brands of Welding Machines Are Able To Access Into Megmeet SMARC

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Centralized Card Reader Terminal

It is mainly used for welders to swipe their cards to bind with welding machines and to receive work tasks. Centralized card reader terminal and SMARC system data is synchronized in real time. It not only supports welder to swipe card to bind welding machine and receive job tasks, but also monitors working status and welding parameters of machines in real time. It can be quickly and conveniently installed and used. Visual touch interface makes it easier for welders and managers to view welding information and manage welding&production.
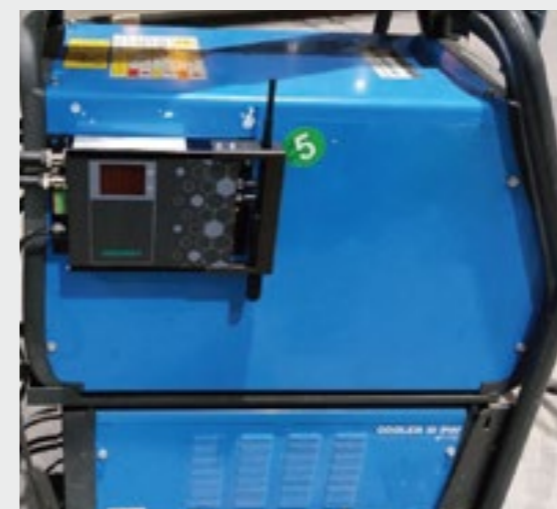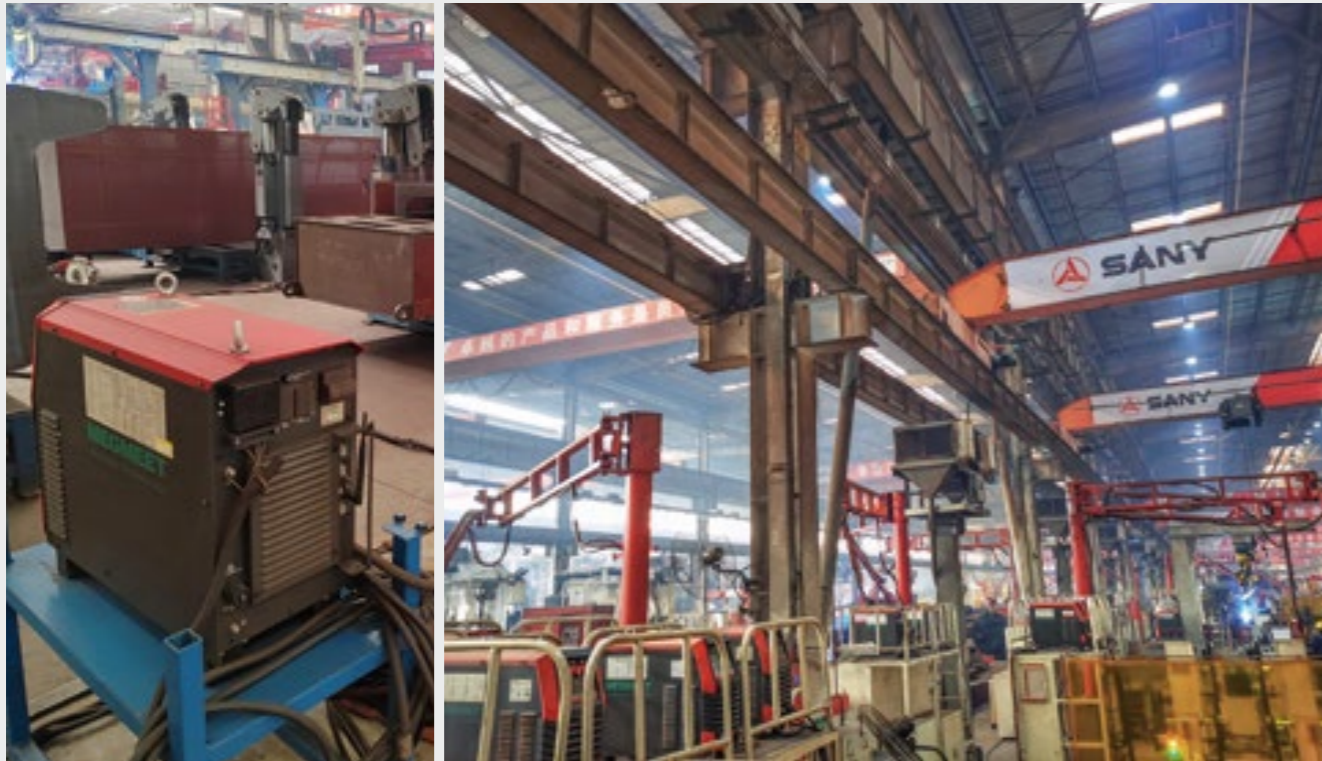

Features and Advantages

· Real-time monitoring of welding machine status, welding parameters, and operating welders.

· Welders swipe card to bind welding machines to realize the recording and statistics of welding data.

· Welders receive work tasks and welding production process is digitally managed.

· Visual touch interface brings more convenient operation for welders and managers.

Field Application
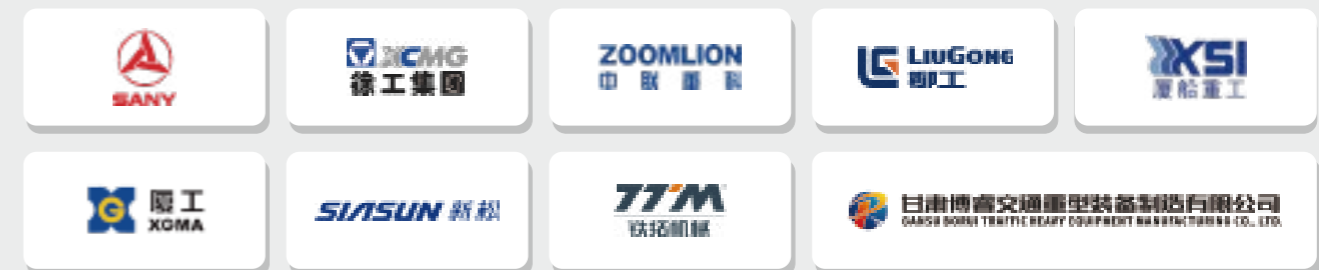
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Industry Cases

Ship/Offshore/Port Machinery Industry

CSSC | CSIC | COSCO SHIPPING | CIMC RAFFLES | CMOC

DAMEN | ZPMC 上海振华重工 | YANGZI 扬子集团 | 博德 | 新时代造船

Steel Structure

中交新能 | MCC 中国五冶 | NCC | 天成钢构 | JW STEEL

Construction Machinery

SANY | XCMG 徐工集团 | ZOOMLION 中联重科 | LiuGong 柳工 | XSI 厦船重工

XOMA 厦工 | SIASUN 新松 | TTM 铁拓机械 | 甘肃博睿交通重型装备制造有限公司 GANSU BORUI TRAFFIC HEAVY EQUIPMENT MANUFACTURING CO., LTD.

Automobile/Special Vehicle/Pressure Vessel/ Electricity/ Others

SUNHUNK | 宇通客车 | 上汽红岩 | 海装 | 亚特重工

杭钢集团 | fives | TTK | 水泊焊割 | 沃晟凯科技