



- Standard plug-in design simplifies installation process
- LED indicators provide visual indication of module and field circuit status
- High density packaging with 1, 2, 4, 8, and 12-point modules
- High 12 bit resolution
- Linearization and conversion of thermocouple and RTD signals
- Intrinsically safe connections to world-wide standards
- Galvanic isolation between points, ground, and central unit (ZE)

A wide variety of I/O modules are available for supporting both conventional and HART-compatible field devices. For ease of installation and maintenance, all modules are designed to plug into the field station system rack. This allows module replacement without touching a single wire. Further, since all connections to these modules are intrinsically safe, this process may be carried out even while energised.

Each module is dimensionally identical (4TE, 3HE) and lightweight in design (200 g / 0.4 lb.). Only one slot is required for mounting within the system rack. This coupled with multi-point modules allows for an extremely dense packaging solution. To increase flexibility, the system rack supports any mix of up to 21 module types.

Where applicable, the modules are fitted with LED's for visual indication of unit and field circuit status, along with trimpots and switches for the selection of measurement ranges, zero/span, and other operational parameters. Refer to the individual module for specific characteristics.

Electrical isolation to intrinsic safety standards is provided between point and ground, point and logic (ZE central unit type 9503), and where applicable, point to point. This gives considerable advantages with respect to their insensitivity to outside electrical disturbances. Full compliance with EMC directives enables R. STAHL to apply the CE Mark on the field station.

Power to each module is provided through the system rack by one Type 9581 Power Supply output. High-level circuits such as 4/20 mA transmitters, solenoid valves, positioners, etc. are powered directly from a separate output. This ensures that adequate power (19 VDC @ 40mA or 24 VDC @ 367 Ohm) is available to drive these devices. Loading problems encountered when using conventional techniques are completely eliminated.

In either case, the energy supplied to the field circuit remains at intrinsically safe energy levels. This enables all field wiring between the field station and the field device to be installed without the need for seals and conduit. Further, maintenance to these circuits may be performed even while under power. The field devices themselves may be installed in either a Zone 0, 1, 2 and Gas Group IIC or Class I, Division 1 or Division 2 hazardous location.

Protection from outside ambient conditions is provided by the field station cabinet. In addition to this, each module is conformally coated on both sides to enhance their protection from dust, moisture, and corrosive atmospheres.

I/O Module Overview					
I/O Module	Application	Signal Range	Points	Channels	Groups
9541/10-04	Analog Transmitters	0/4...20/24mA	8	8	*
9542/20-02	Thermocouples	K, E, J, L, T, U, R, S, B	8	8	IIC-IIA/A-G
9543/10-12	2-, 3-, and 4-wire RTDs	-200... +800°C	8	8	IIC-IIA/A-G
9548/10-16	HART field devices	1200/2200Hz	16	1	*
9551/10-04	Switches, Proximity Sensors	NAMUR (DIN 19234)	4	1	IIC-IIA/A-G
9551/10-12	Switches, Proximity Sensors	NAMUR (DIN 19234)	12	1	IIC-IIA/A-G
9555/10-.4	Frequency / Pulse Counter	0...20kHz, 0...100Hz	4	4	IIC-IIA/A-G
9561/10-..	I/P, Control valves, Loop Indicators	4...20mA, 1...5V, 2...10V	2	2	*
9571/11-18	Solenoid valves, LEDs, Audible Alarms	open collector 30V/200mA	8	1	*

*Determined by wiring configuration.

Explosion Protection	
Agency	PTB to CENELEC, EN50 014, 50 020 FM to FM 3610 standards
Rating	I.S. connections for Zone 0, 1, 2 group IIC I.S. connections for Class I, II, III, Division 1 and 2
Installation	I.S. for Zone 1 and 2 N.I. for Class I, Division 2
Safety Values	see respective approvals

Electrical Specifications	
Galvanic Isolation	point to ZE typ 9503 yes point to ground yes point to point 9531, 9542/20, 9551, 9555, 9561
Test voltage	500VAC
Backplane power	see module specifications
Resolution	12 bit + sign unless stated otherwise
Basic error	< ±0.05% @ 24°C (77°F) unless stated otherwise
Temperature effect	< ±0.05% per 10K @ 24°C (77°F)

Mechanical Specifications	
Dimensions	Eurocard 4TE (20mm), 3HE
Mounting	System rack
Mounting position	Vertical
Weight	200 g / 0,4 lb.
Connection Type	Male, type F (DIN 41612), coded
Storage Temperature	(-40...+80°C) -22 ...to +176°F
Operating Temperature	(-20...+60°C) -13 ...to +140°F
Humidity	0...95%, no condensation

