



- Intrinsically safe outputs meeting worldwide standards eliminate the need for safety barriers.
- Isolated outputs reduce susceptibility to ground loops and outside electrical noise.
- Replacement of modules may be performed while energised.
- Outputs may be configured to provide redundant supplies to critical points.

In order to provide the maximum allowable power to the hazardous area, the Power Distribution System (SVB) incorporates four explosion protection techniques into its design.

Primary power from the safe area location is provided by an external 24VAC or DC source to a distribution bus (EEx e) located within each field station. A transformer may be installed to allow for an external 120VAC or 230VAC source. This power is then safely distributed to plug-in power supplies within the field station.

STAHL

The Type 9581 Power Supply comprises a plug-in powder filled module which occupies three slots within the system rack. The primary supply is brought in via a specially constructed plug and socket combination while nine intrinsically safe outputs are taken off through male connectors. Multiple power supplies are installed within the field station system racks as required.

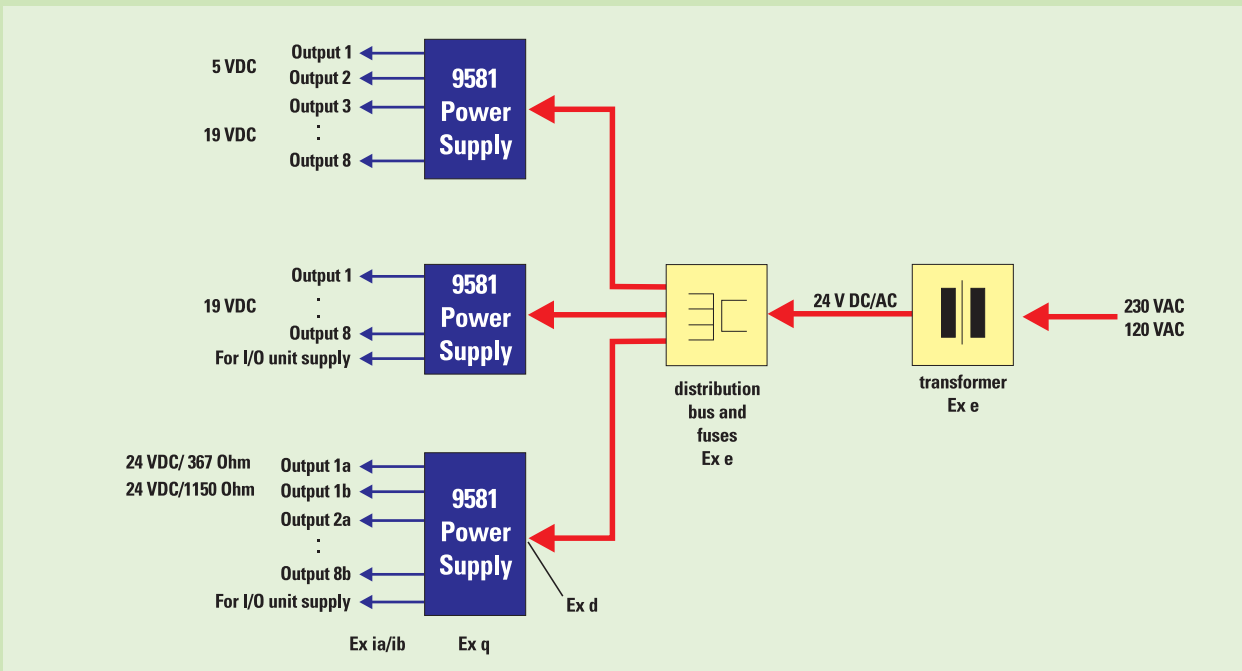
A bridge rectifier on the input side permits a primary supply of either AC or DC voltage. The rectified primary voltage is chopped and transferred to the output circuits via transformers which are galvanically isolated from each other. The voltage is rectified at the output side, where current and voltage is limited either electronically or ohmic.

The power supply module has nine intrinsically safe outputs of various voltage/current. One of these nine outputs is intended to supply the I/O module when using high level 8-channel modules (AI or DO) while the other eight supply the field circuits. Since the outputs are at intrinsically safe energy levels there is no need for external safety barriers. This gives a considerable advantage when energising high-level loads like transmitters and solenoids.

The outputs are also isolated from each other up to 500VAC and up to 2.5kV between the input and output sides. This isolation helps to eliminate ground loops and to reduce susceptibility from outside electromagnetic interference.

The combination of intrinsically safe outputs and a specially designed sealed connector on the input side allows removal and replacement of this power supply even while energised. When the outputs are used to energise I/O and central unit modules, live replacement of these items is also permitted.

All wiring between the field station terminal blocks and the field device may be installed and handled as though they are in a non-hazardous environment.



Block Diagram of Power Distribution System.

Explosion Protection

Agency	PTB to CENELEC, Ex.B.2080X FM to FM 3610, J.I.AX.
Rating	I.S. connections for Zone 0, 1, 2, group IIC-IIA I.S. connections for Class I, II, III, Division 1 and 2, Groups A-G
Installation	I.S. for Zone 1 and 2 N.I. for Class I, Division 2
Safety Values	see relevant approval

Electrical Specifications

Output Side	9581/23-38-05-100	9581/23-38-05-200	9581/23-19-19-148	9581/23-19-19-248	9581/23-19-24-107
Number of Outputs	2	6	2	6	8
Rated Voltage [VDC]	5	19	5	19	19
Rated Current [mA]	80	40	150	40	27
Internal Resistance [Ohm]	n/a	n/a	n/a	n/a	n/a
Short-circuit Protection	yes	yes	yes	yes	yes

*1 only for supply of I/O units, galvanically connected with output 1

Mechanical Specifications

Dimensions	Eurocard, 12TE, 3HE
Mounting	System Rack
Mounting Position	Vertical
Weight	(2000 grams) 4.4 lbs.
Connection Type	
Input Side	EEx d socket
Output Side	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	<95%, no condensation

