

VERSAMAX IP INPUT MODULE

IC676PBI016-EA

16-point digital input module with integrated PROFIBUS-DP interface

TECHNICAL SUBMITTAL

IP67 DISTRIBUTED I/O



PRODUCT PAGE IMAGE - IC676PBI016-EA

Product image sourced directly from the specified MooreDCS product page.

PRODUCT IDENTITY

Manufacturer: GE Fanuc Automation

Product: VersaMax IP input module

Order no.: IC676PBI016-EA

Base module: IC676PBI016

SYSTEM ROLE

Accepts 16 digital field-input signals and transfers their states to a PROFIBUS-DP master.

Standalone IP67 module for machine-level distributed I/O.

DOCUMENT BASIS

GE Fanuc GFK-2293

IC676PBI016 datasheet, January 2004.

ELECTRICAL & INPUT DATA

Verified IC676PBI016 values from GE Fanuc document GFK-2293

DISCRETE INPUT CHARACTERISTICS

Number of inputs	16 digital inputs
Switching thresholds	Low level: < 5 V maximum; high level: > 11 V minimum
Nominal input voltage	24 VDC
Permissible input range	-30 V < U _{IN} < +30 VDC
Nominal input current	3 mA; constant-current characteristic
Input delay	ON: < 1 ms typical; OFF: 2 ms typical
Sensor cable length	100 m (328 ft) maximum
Connection style	M12; 2-, 3- and 4-wire sensor connection

SENSOR SUPPLY

Minimum sensor voltage	US - 1 V
Current capacity	75 mA nominal per channel; 1.2 A nominal per module
Protection	Electronic overload and short-circuit protection per module

MODULE SUPPLY & ISOLATION

Module supply	24 VDC nominal; 18 to 30 VDC operating range
UL current at 24 VDC	35 mA typical; 100 mA maximum
US current at 24 VDC	8 mA typical plus sensor current; 1.2 A maximum
Isolation test	500 VAC, 50 Hz, 1 minute across documented voltage areas

CONNECTORS, NETWORK & DIAGNOSTICS

M12 functions, pin assignments, PROFIBUS settings and fault indications

CONNECTOR FUNCTIONS

FE	Functional earth ground
BUS IN	PROFIBUS input
BUS OUT	PROFIBUS output
ULS IN	Voltage supply input
ULS OUT	Supply output to additional modules
IN1-IN16	Digital inputs 1 through 16

M12 PIN ASSIGNMENTS

PROFIBUS	1 VP 2 RxD/TxD-N (A) 3 DGND 4 RxD/TxD-P (B) 5 Shield
POWER	1 UL +24 V 2 US GND 3 UL GND 4 US +24 V
SHIELD	M12 connector thread is used for shielding.

COMMUNICATION & ADDRESSING

PROTOCOL	PROFIBUS-DP; autobaud up to 12 Mbaud.
ADDRESS	Rotary switches set station 1-99; accepted at power-up.
> 3 MBAUD	Use T-pieces with integrated series inductance.
SHIELD	Incoming and outgoing shield connection direct to FE.

DIAGNOSTICS & FAULT ACTION

BF	Bus fault / no cyclic data exchange.
UL	Green: communications power present.
US	Green: sensor supply present; red: overload.
INPUT	Yellow LED indicates active input.
FAULT	Sensor-supply overload or short circuit switches supply off and reports to the master.

OEM CATALOG EXTRACT & ORDERING DATA

GE Automation & Control Systems catalog - VersaMax IP standalone modules

READ THE IC676PBI016 COLUMN FOR THE BASE-MODULE SPECIFICATION

VersaMax IP

Process Automation Control Systems



Stand Alone Input and Output Modules

VersaMax IP modules are designed for distributed automation tasks in harsh environmental conditions. Modules meet the requirements for both IP65/IP67 protection. They enable the direct connection of sensors and actuators in an environment close to the station. Every VersaMax IP device is connected directly to the bus system.

	IC676PBI008	IC676PBI016	IC676PBM442	IC676PBO082
Product Name	8 Point Input Module, PROFIBUS	16 Point Input Module, PROFIBUS	4 Point Input and 4 Point (2 Amp) Output Module, PROFIBUS	8 Point (2 Amp) Output Module, PROFIBUS
Lifecycle Status	Active	Active	Active	Active
Protocol	PROFIBUS DP	PROFIBUS DP	PROFIBUS DP	PROFIBUS DP
Module Power	24 VDC	24 VDC	24 VDC	24 VDC
Module Power Range	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
Module Current Consumption UL at 24 VDC	35 mA typical, 100 mA maximum	35 mA typical, 100 mA maximum	40 mA typical, 100 mA maximum	40 mA typical, 100 mA maximum
Module Current Consumption US at 24 VDC	4.5 mA typical plus sensor current 700 mA maximum	8 mA typical plus sensor current 1.2 A maximum	4.5 mA typical plus sensor current 700 mA maximum	3 mA typical plus sensor current 700 mA maximum
Module Current Consumption UAXX at 24 VDC	N/A	N/A	6 mA typical plus actuator current, 4 A maximum	12 mA typical plus actuator current, 4 A maximum
Connection Style (M12)	2-, 3-, and 4-wire	2-, 3-, and 4-wire (Y connector to support two sensors per connector)	2- or 3-wire	2- or 3-wire
Operating Temperature	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)
Degree of Protection	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods
Class of Protection	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529
Housing Dimensions (W x H x D)	60 mm x 160 mm x 44.5 mm	60 mm x 160 mm x 44.5 mm	60 mm x 178 mm x 49.3 mm	60 mm x 178 mm x 49.3 mm

ORDERING ACCESSORIES

IC676ACC001	Point labels, qty 50
IC676ACC002 / 003	Protective caps for unused male / female connections, qty 5
IC676ACC004 / 005	PROFIBUS terminating resistor / network tee

TRACEABILITY GFK-2293, Jan 2004 | GE Automation & Control Systems catalog p.1.168 | MooreDCS IC676PBI016-EA product image

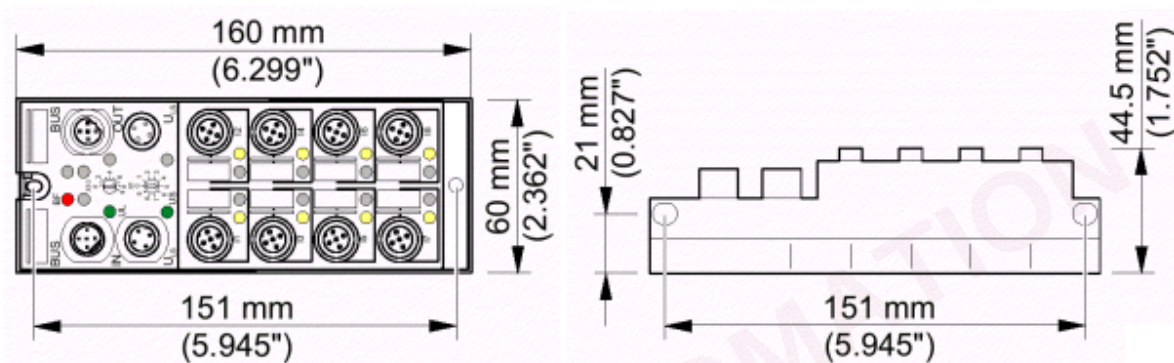
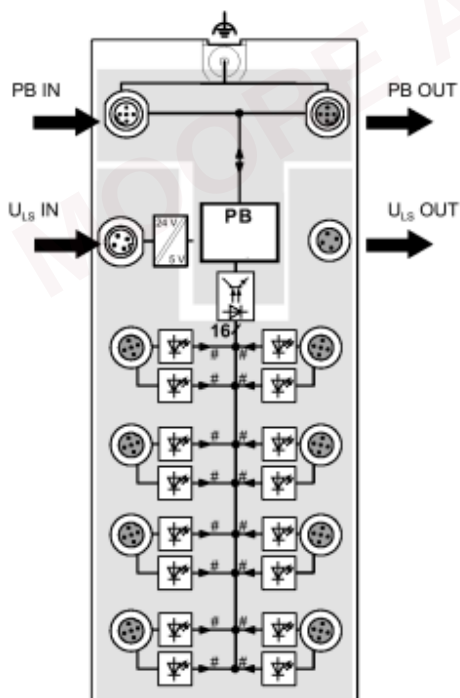
Moore document: MA-TDS-IC676PBI016-EA-EN | Rev. 03 | Issue date: 30 Sep 2026

GFK-2293 OEM REFERENCE

Module dimensions and internal circuit diagram

GFK-2293

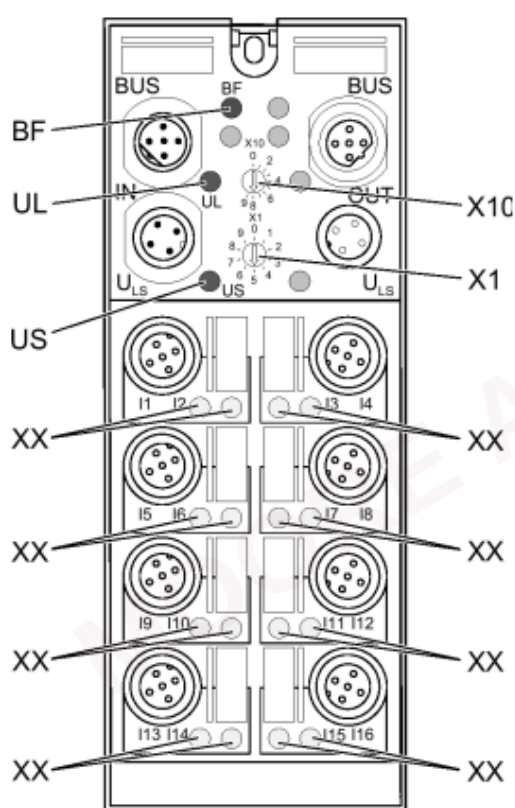
January 2004

Module Dimensions

Internal Circuit Diagram


	Isolating transformer
	LED (status indicators)
	Optocoupler
	Digital input
	Isolated area

GFK-2293 OEM REFERENCE

LED indications and station-address switches

Module LEDs and Rotary Switches


LEDs		
BF	Red LED	Bus failure
	ON	- No cyclic data transmission - Profibus not connected; master not online - Incorrect settings (configuration via master, station address) - Synchronization or parameterization running - Timeout expired
UL	OFF	- Module is addressed by Profibus and is in the "cyclic process data exchange" state. - Missing module supply (in this state the UL LED also is off because of the missing 24V communications voltage).
	Green LED	Communications power
	ON	Communications power present
US	OFF	Communications power too low
	Red/green LED	Voltage supply for I1 to I16
	ON (red)	Voltage supply overload
	ON (green)	Voltage supply present
XX	OFF	Voltage too low
	Yellow LED	Input status indicator
	ON	Input active
	OFF	Input not active

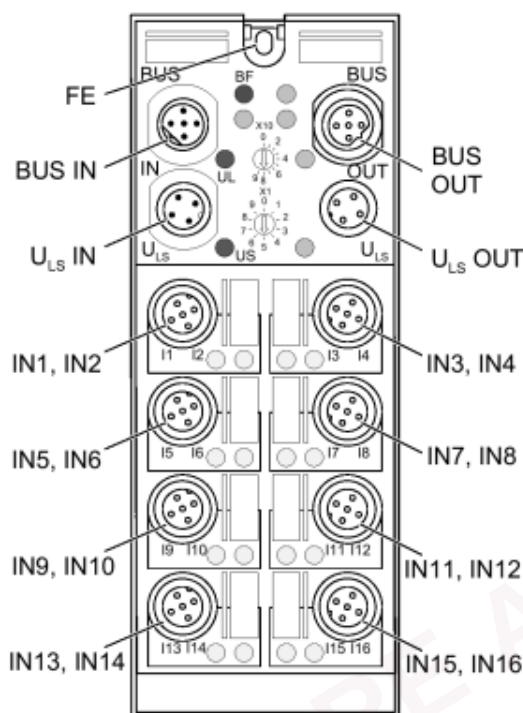
Selecting the Station Address

The rotary switches are used to set up the two digits that represent the module's station address. Rotary switch X10 selects the first digit, and switch X1 selects the second digit.

The Profibus master addresses the module by means of this station address. The address must be a number from 1 to 99. A new address is only accepted when the module is powered up.

GFK-2293 OEM REFERENCE

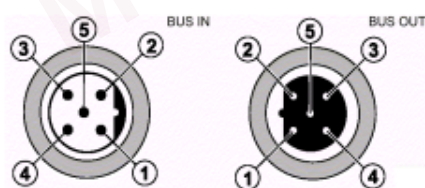
Connector functions and PROFIBUS / power pin assignments

Module Connectors


Connector	Function
FE	Functional earth ground
BUS IN	Profibus In
BUS OUT	Profibus Out
U_{LS} IN	Voltage supply in
U_{LS} OUT	Voltage supply out for additional modules
IN1 TO IN16	Inputs 1 to 16

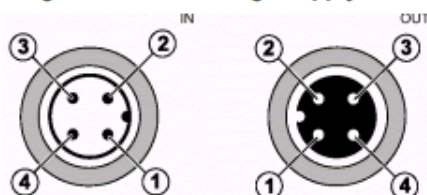
Connection Guidelines

- **Meet Noise Immunity Requirements.** Connect FE using a mounting screw, or (when mounting the module on the side or on a non-conductive surface), using a cable connection to the FE connection point.
- **Ensure IP67 Protection.** Cover the unused sockets with protective caps (IC676ACC002 and ACC003).
- **Avoid Damage to the Electronics.** Supply the sensors with the appropriate voltage U_S at the connection points.
- **Avoid Polarity Reversal of the supply voltages U_L, U_S, and U_A** to avoid damage to the device.
- **Connect the sensors to the** correct points as shown on the next page.

Profibus Pin Assignments


The thread is used for shielding.

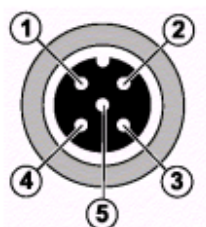
Pin	In	Out
1	VP	VP
2	RxD/TxD-N (A)	RxD/TxD-N (A)
3	DGND	DGND
4	RxD/TxD-P (B)	RxD/TxD-P (B)
5	Shield	Shield

Pin Assignment of the Voltage Supply


Pin	In	Out
1	U _L +24V	U _L +24V
2	U _S GND	U _S GND
3	U _L GND	U _L GND
4	U _S +24V	U _S +24V

GFK-2293 OEM REFERENCE

Input pin assignment and connection examples

Pin Assignment of the Inputs


1	US +24V
2	Input 2, 4, 6 ... 16
3	GND
4	Input 1, 3, 5 ... 15
5	FE

Connection Examples
