

## 7.4 DI477

### 7.4.1 General Information

The DI477 is a standard digital input module.

### 7.4.2 Order Data


Model Number	Short Description	Figure
3DI477.6	2005 digital input module, 32 inputs 24 VDC, 1 ms, sink/source, 8 electrically isolated input groups	
Connection made using DSUB connector.		

Table 105: DI477 order data

### 7.4.3 Technical Data

Product ID	DI477
C-UL-US Listed	Yes
B&R ID Code	\$05
Number of Inputs Total in 8 Groups of	32 4
Electrical Isolation Input - PLC Group - Group Input - Input (same group)	Yes (optocoupler) Yes (optocoupler) No
Wiring	Sink or source

Table 106: DI477 technical data

Product ID	DI477
Input Voltage Nominal Maximum	24 VDC 30 VDC
Input Resistance	4.8 kΩ
Switching Threshold LOW Range Switching range HIGH Range	< 5 V 5 to 15 V > 15 V
Input Delay Typical Maximum	1 ms 1.2 ms
Input Current at Nominal Voltage	Approx. 5 mA
Maximum Peak Voltage	500 V for 50 μs max. every 100 ms
Power Consumption 5 V 24 V Total	Max. 1.5 W --- Max. 1.5 W
Dimensions	B&R 2005 single-width

Table 106: DI477 technical data (cont.)

### 7.4.4 Status LEDs


Figure	LED	Description
	1 - 32	The status LEDs indicate the logical status of the corresponding inputs. Regardless of the type connection (sink or source connection), the LED is lit if the input is logical 1, i.e. when the current flows through the optocoupler.

Table 107: DI477 status LEDs

### 7.4.5 Connection Elements

Since the DI477 module has 32 digital inputs and B&R 2005 controller terminal blocks are only 20-pin, two 25-pin DSUB sockets are built into the module.

The connection for the DSUB socket is made using two 25-pin DSUB connectors. Due to space restrictions it is necessary to use crimp connectors and rolled ribbon cable for the connection.

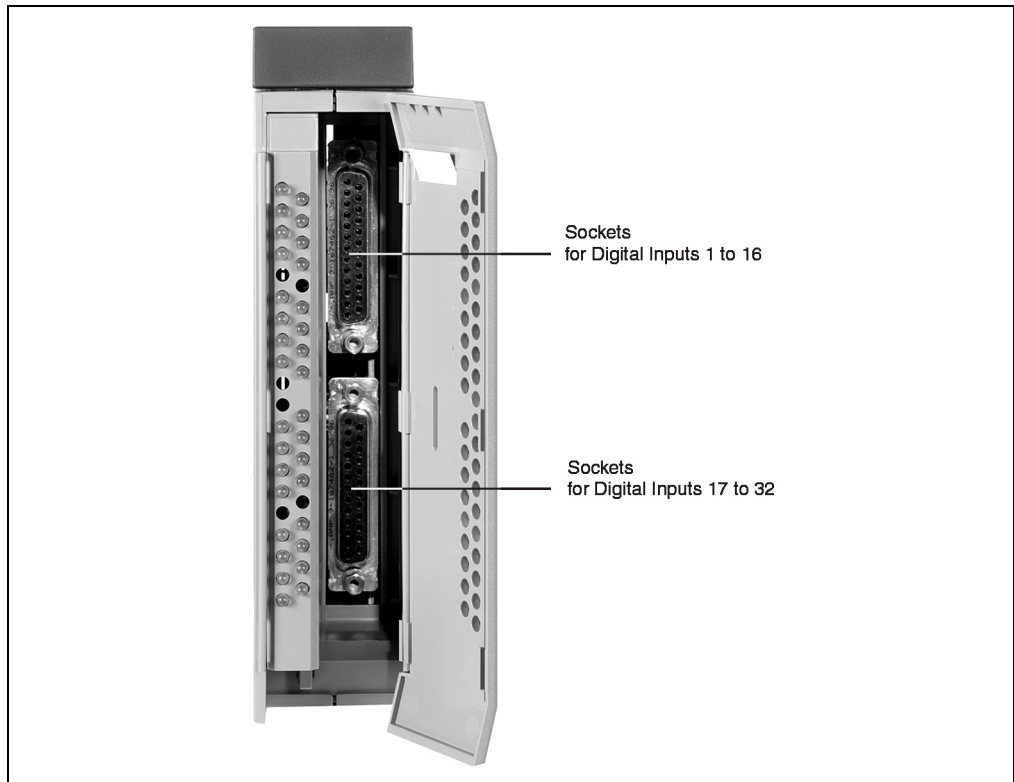


Figure 91: DI477 connection elements

### 7.4.6 Pin Assignments for DSUB Sockets

With these pin assignments, a COM line and the lines for the four inputs that belong to it are located beside each other for this ribbon cable. Therefore, it is possible to split the ribbon cable and run electrically isolated groups for external connection. For an external contact, terminal blocks can be used with a 1:1 conversion DSUB ↔ connector (e.g. from Phoenix).

Upper 25-pin DSUB Socket	Pin	Assignment	Group
	1	---	
	2	Input 15	4
	3	Input 13	4
	4	---	
	5	Input 11	3
	6	Input 9	3
	7	---	
	8	Input 7	2
	9	Input 5	2
	10	---	
	11	Input 3	1
	12	Input 1	1
	13	---	
	14	Input 16	4
	15	Input 14	4
	16	COM (13-16)	4
	17	Input 12	3
	18	Input 10	3
	19	COM (9-12)	3
	20	Input 8	2
	21	Input 6	2
	22	COM (5-8)	2
	23	Input 4	1
	24	Input 2	1
	25	COM (1-4)	1

Table 108: DI477 pin connections for the upper 25-pin DSUB socket

Lower 25-pin DSUB Socket	Pin	Assignment	Group
	1	---	
	2	Input 31	4
	3	Input 29	4
	4	---	
	5	Input 27	3
	6	Input 25	3
	7	---	
	8	Input 23	2
	9	Input 21	2
	10	---	
	11	Input 19	1
	12	Input 17	1
	13	---	
	14	Input 32	4
	15	Input 30	4
	16	COM (29-32)	4
	17	Input 28	3
	18	Input 26	3
	19	COM (25-28)	3
	20	Input 24	2
	21	Input 22	2
	22	COM (21-24)	2
	23	Input 20	1
	24	Input 18	1
	25	COM (17-20)	1

Table 109: DI477 pin connections for the lower 25-pin DSUB socket

### 7.4.7 Input Circuit Diagram

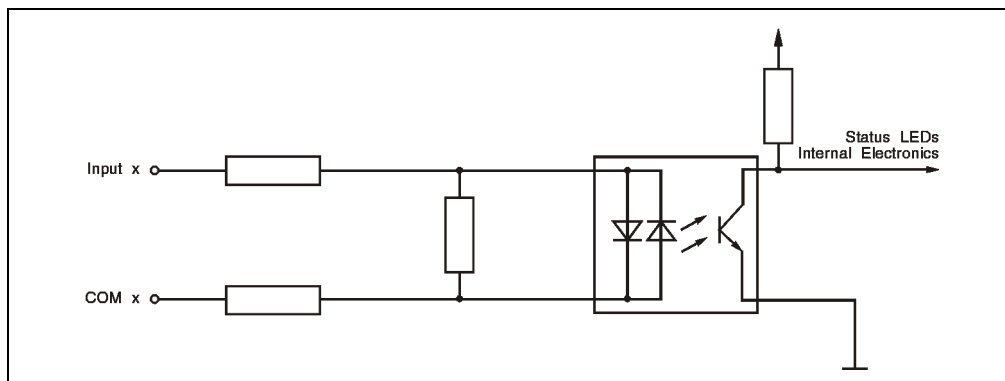


Figure 92: DI477 input circuit diagram

### 7.4.8 Variable Declarations

The variable declaration is made in B&R Automation Studio™:

Function	Variable Declarations				
	Scope	Data Type	Length	Module Type	Chan.
Read single digital input (channel x)	tc_global	BOOL	1	Digit. In	1 ... 32

Table 110: DI477 variable declaration