

Use of hybrid DI/DO in V257 and V259

The hybrid DI / DO card (7 = 8 standard inputs, 4 TCS Hybrid inputs/outputs) has been removed from active promotion of V257 and V259 IEDs.

Additional I/O (X8 terminal)

- 6 = None
- 7 = ~~8 standard inputs, 4 TCS Hybrid inputs/outputs~~
- 8 = 10 outputs
- 9 = 8 standard inputs and 4 outputs

As option 7 is not supported anymore the maximum amount of DI is reduced from 32 channels down to 28.

Spare parts are supported by separate request but the user is required to pay special attention to this application note in case such product variant must be used.

NOTE: Failure to follow following instructions will lead to equipment damage and loss of data.

1 Hybrid DI/DO connection

The digital input and digital output are parallel in hybrid DI/DO module. Never connect, configure, operate or control DO (trip relay) output if Digital input is in use. Should the control of Trip relay happen the output contact will short-circuit Digital input and will lead to equipment damage and loss of data.

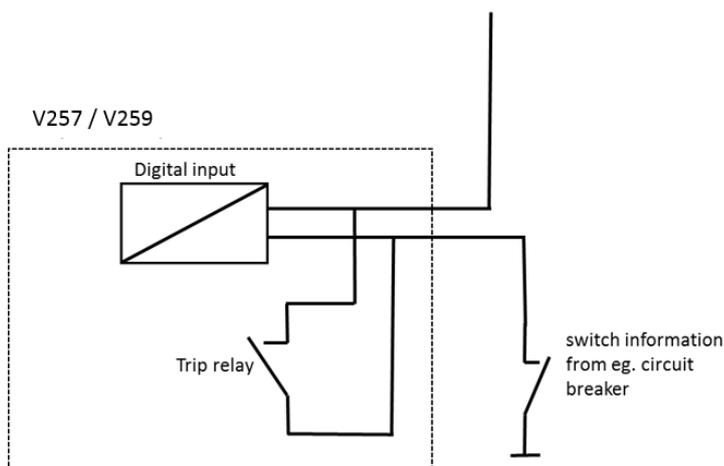


Figure 1.1. Principle of hybrid DI and DO module connection.

NOTE: Never use hybrid DI/DO channels simultaneously.

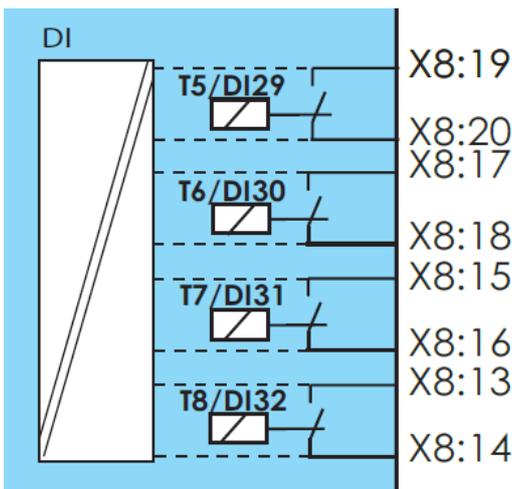


Figure 1.2. Terminal numbering of hybrid DI/DO of 7 = 8 standard inputs, 4 TCS Hybrid inputs/outputs module.

2 Hybrid output's constant current flow

Through the digital input there is constant current flow of about 2 mA. This can cause unwanted operation of the semiconductor driven circuit breakers.

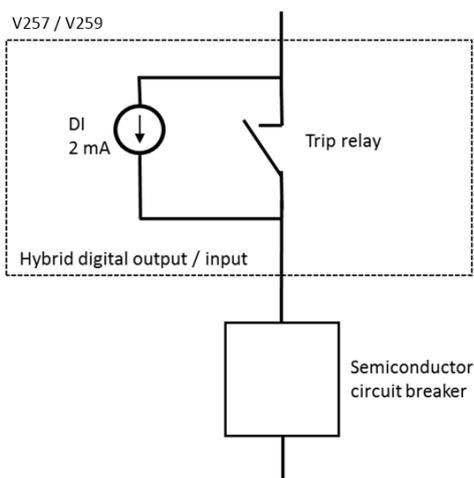


Figure 2.1. Principle diagram of hybrid DI/DO module showing constant current flow

The semiconductor driven circuit breaker has a high resistance input resulting that the 2mA current is enough to switch/activate the breaker unnecessarily.

NOTE: Never use hybrid outputs to control semiconductor driven circuit breakers directly.

3 Work-around to utilize hybrid DO for a semiconductor driven circuit breaker

Should it be mandatory to utilize control of semiconductor driven CB by a hybrid DO an interposing tripping relay is required, as illustrated in the following drawing, between the DO and electronics of the CB.

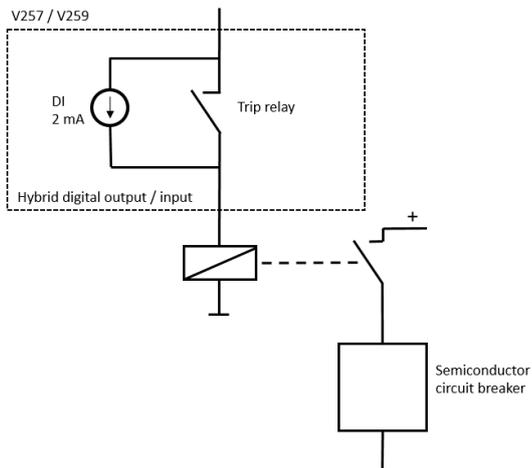


Figure 3.1 Use of interposing trip relay between hybrid DO and electronics of circuit breaker.