

## MOD-COMBI36 Modbus Analogue Output Modules

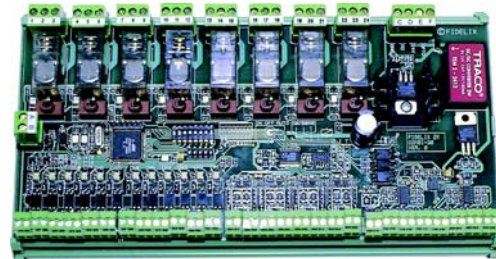
MOD-COMBI36 36-Channel Combination Module combines four different module types. Combi module is designed for small applications, but it is also cost effective for larger projects. Basic features are same as in single MOD-AI/DI/DO/AO modules. All important values are saved to eeprom during power off.

Module address and communication speed is selected using onboard dip-switch. Combi-36 module is seen as four separate modules and thus it reserves four Modbus addresses.

The DIP switch gives the address of Digital Inputs. Digital output Modbus address is digital input address + 1, analogue input address is digital input address + 2 and analogue output address is digital input address + 3.

### Features

- 12 Digital Inputs, Volt-Free or Pulse
- 8 230Vac Rated Digital Outputs, Override Switch
- 8 Analogue Inputs, 0..10Vdc or 4..20mA
- 8 Analogue 0..10Vdc Outputs
- High Resolution A/D and D/A Converters
- Plug-in Terminals



- DIN-rail Mounting
- RS-485 Communication using Modbus RTU

Model Type	Model	Description
	<b>MOD-COMBI36</b>	12 Digital Inputs, 8 Digital Outputs, 8 Analogue Inputs, 8 Analogue 0..10Vdc Outputs, Modbus Communications.
<b>Technical Data</b>	Operating Voltage	20..26Vdc
	Power Consumption	70..85mA
	Communication	Modbus RTU
	Communication Speed	9600 bps, 19200 bps, 38400 bps or 57600 bps
	Address Range	1..63 via bit switch
	Operating Temp	0..50°C
	Weight	0.55 kg
	Dimensions	W235 x H130 x D65 mm
<b>Digital Inputs</b>	Input Loop Supply Voltage	20..48Vdc
	Input Loop Current	23mA @ 24Vdc / active loop
	Accepted Open Contact Resistance	50 kOhm - infinity @ 24 VDC loop voltage
	Accepted Closed Contact Resistance	0 Ohm - 1 kOhm (serial) @ 24 VDC loop voltage
	Acceptable Minimum Pulse Width	Programmable, 5ms - 1275ms
	<b>Digital Outputs</b>	Rated Load Output
Maximum Switching Capacity		2500VA
Coil Current		Approx. 26mA / Active Relay

**Analogue Inputs**                      Rejection at 50Hz                      Better than 110 dB  
 Sensor Types                              NTC, Pt1000, Ni1000, 0..20mA, 0..10V, 2..10V  
 Loop Current for Resistive Sensors                      0.5 mA @ 1kOhm, 0.2mA @ 10kOhm

**Analogue Outputs**                      Maximum Output Voltage                      10Vdc  
 Maximum Output Current                      20 mA

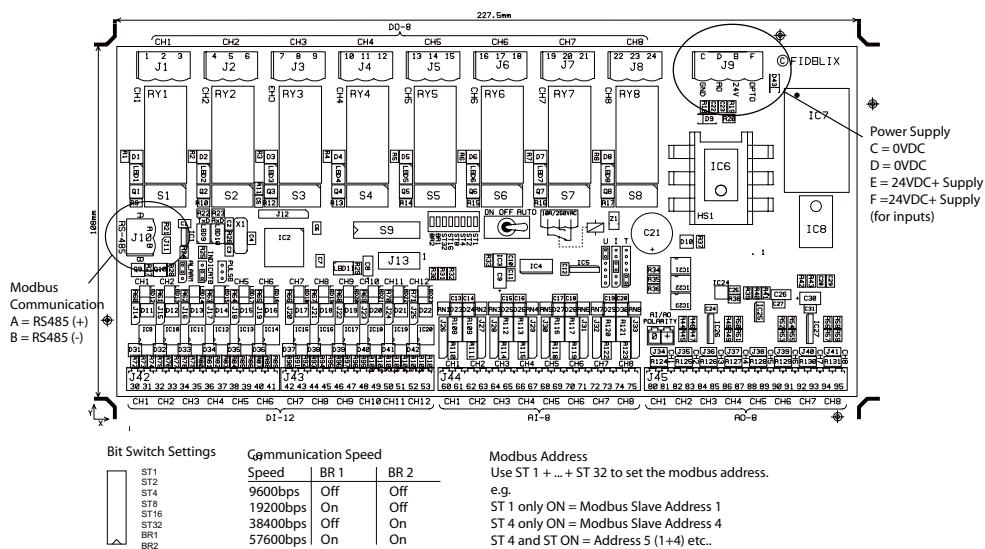
**Digital Inputs**                              Digital inputs are used to interface potential free contacts. Normally closed and normally open contacts can be used. Each channel can be independently configured as alarm point, indication point or pulse counter. Acceptable pulse width can be independently set for each channel.

**Digital Outputs**                              Digital outputs are used to control different equipments through relay outputs. Each output relay is changeover type and can also be controlled manually using dedicated switch. If serial communication between module and outstation fails, each output can preserve their current states or get preset values as programmed. Indication led lights when corresponding relay is activated.

**Analogue Inputs**                              Analog inputs are used to interface measurement circuits. Each channel can be separately configured to measure resistive sensors, current loops or voltage messages. Configuration is done using setup jumpers. Analog to digital converter is high precision 20-bit sigma-delta converter, which has better than 110 dB rejection at 50 Hz. Analog Input module can also be used to interface potential free contacts.

**Analogue Outputs**                              Analog outputs are used to generate voltage controlling signals. It can be used to generate 0..10V or 2..10V signal levels. Also current controlling and direct relay driving is possible, but not recommended because module has no current feedback circuitry. All outputs are short circuit protected. If serial communication between module and substation fails, each output can preserve their current states or get preset values as programmed.

**Wiring Details**



Signal	Corresponding module	Address
Digital inputs	DI-16	10
Relay outputs	DO-8	11
Analogue inputs	AI-8	12
Analogue outputs	AO-8	13

**Modbus Registers**                              The MOD-COMBI36 is a Modbus RTU slave. For further information on the Modbus registers please to the *Modbus IO-Module Configuration Guide*.