New features available!

Configuration mode for IP settings

When you have a device with unknown address and want to make quick IP setup, you can switch the module to the CONFIGURATOIN MODE. Just hold the reset button during reboot for a few seconds (status LED will be blinking frequently).
The module will start with **192.168.4.1** address. To switch back to normal mode reboot the module.

Configuration Web server

In the configuration mode, there is Configuration web-page available on the **192.168.4.1**. Instead of Modbus register, you can use this page for module setup. The page can be switched off during setup. To enable it again, use the following register:

Address	Description	Default
039	Configuration Web server enable	0 (No)

IP configuration

To connect **7Bit Synapse** to a network, we recommend DHCP method (default), but in some cases, users may prefer static IP. With a new Synapse firmware you can access all registers via Modbus TCP. Please refer to the table below for TCP settings:

Address*	Description	Default
040	Static IP enable	0 (No)
041	IP (1)	192
042	IP (2)	168
043	IP (3)	1
044	IP (4)	2
045	Mask (1)	255
046	Mask (2)	255
047	Mask (3)	255
048	Mask (4)	0
049	Gateway (1)	192
050	Gateway (2)	168
051	Gateway (3)	1
052	Gateway (4)	1

* Modbus Holding registers

MQTT support

MQTT support enables IoT applications with Synapse. Please visit docs.webhmi.com.ua (#synapse. #iot) for more information on this.

Address	Description	Default
150	MQTT Enable, [0,1]	
151	Broker IP address **X**.x.x.x	
152	Broker IP address x.**X**.x.x	
153	Broker IP address x.x.**X**.x	
154	Broker IP address x.x.x.**X**	
155	TCP port	
156 – 176	Login	
177 – 197	Password	
200 - 230	Domain name server	

Safe power on

After power on the module can restore its outputs to a previous state. For many applications it is convenient feature, but for some not. E.g. some parts of a heavy machine may accidentally move on repower and cause dangerous situation. To avoid this problem now there is a special setting to choose output state after repower - keep previous state or all turned off.

Address	Description	Default
035	Safety state	0 (No)

Predictive maintenance

Power on cycles and run hours may reduce life-time of the equipment under monitor. Now it is possible to count them using Synapse digital inputs.

Address	Description	Typer
000 ~ 014	DI 1 ~ 8 counter	DW
076 ~ 090	DO1 ~ 8 counter	DW
060 ~ 074	DI 1 ~ 8 run. time (sec.)	DW
076 ~ 090	DO1 ~ 8 run. time (sec.)	DW

PWM for triac outputs

Address	Description	Default
111 ~ 118	DO1 ~ 8 PWM duty cycle	0

The duty cycle is set as 0 .. 100 which means how many periods of AC current from one hundred will power the load. So the timebase of the PWM is 100 * 20 ms (1/50Hz) = 2 seconds. Before using DO for common ON – OFF control set PWM values to

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