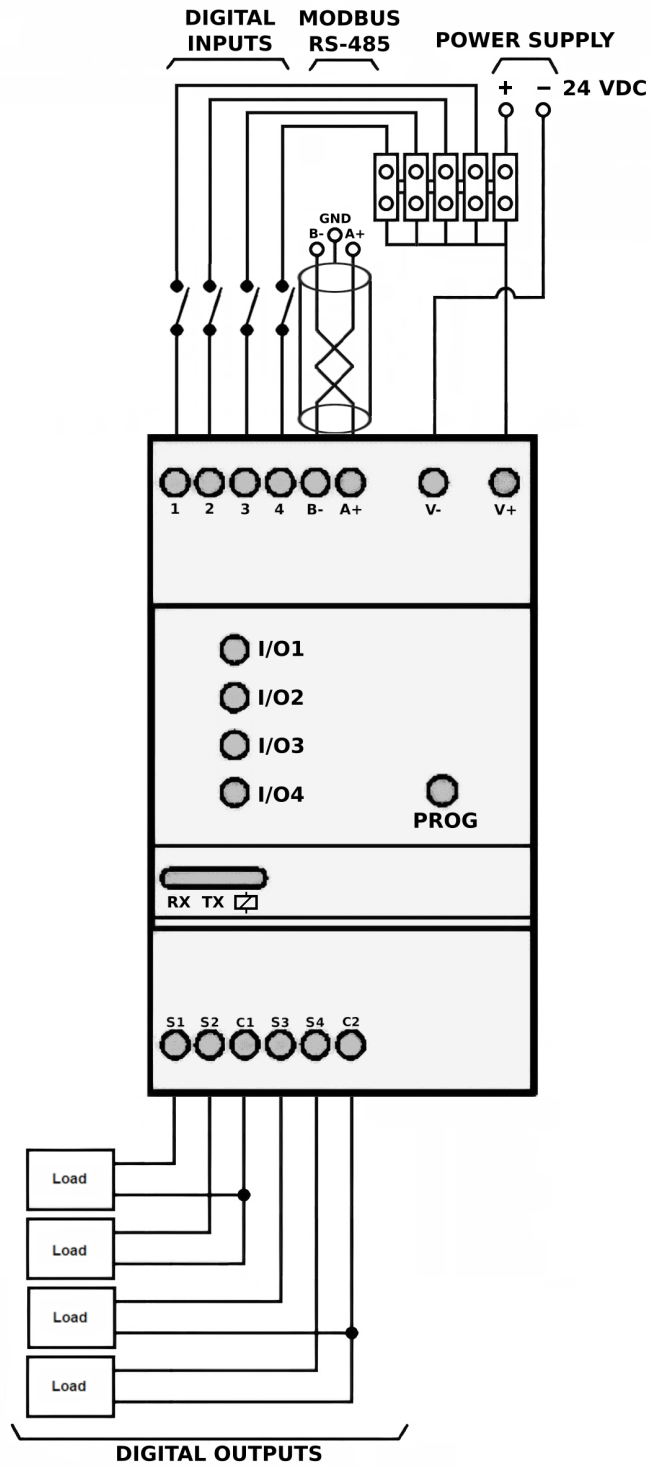


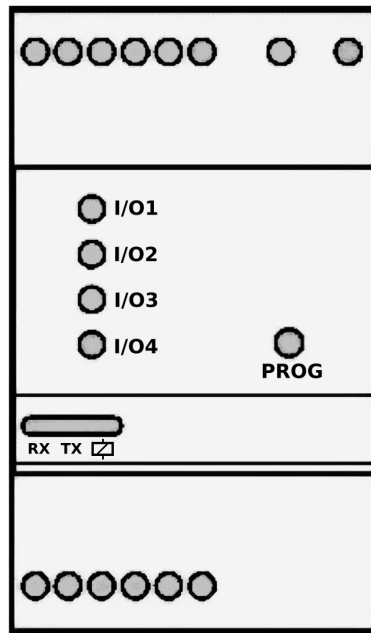
<b>Description</b>	
	Pulse centralizer with 4 optocoupled digital inputs and 4 relay outputs. The digital inputs are associated with four memory registers for pulse counting.
<b>Featured Features</b>	
	<ul style="list-style-type: none"> <li>- Ideal for water or gas meter reading and remote control applications</li> <li>- Digital inputs for pulse counting or for open/closed contact detection</li> <li>- RS-485 Modbus RTU communications to allow remote telemanagement</li> </ul>
<b>Electrical data</b>	
Power supply	18 .. 30 VDC
Maximum consumption	2 W
<b>Environmental conditions</b>	
Temperature	-10 .. +80 °C
Humidity	5% .. 80%
Maximum working altitude	2000 m
<b>Mechanical data</b>	
Surround material	UL 91 V0
Protection degree	IP20
Dimensions	91,5 x 52,5 x 66 mm
Weight	150 g
Mounting	DIN rail
<b>Serial interface</b>	
Type	RS-485 three threads (A+/S GND/ B-) (RX/GND/TX)
Transmission speed	9600 / 19200 bps configurable
Data bits	8
Parity	Configurable even or without parity
Stop bit	1
<b>Characteristics and electrical safety</b>	
Electrical safety	CAT II 300 V according to EN 61010
Electric shock protection	Double insulation class II
<b>Digital input features</b>	
Type	Optoisolated voltage free (dry contact) + NPN/PNP
Voltage	18 .. 30 VDC
Maximum activation current	50mA
Maximum counting frequency	1 kHz
Maximum counting value	4.294.967.295 impulses
Detection delay	Configurable from 0 to 3276ms (default 5ms)
<b>Characteristics digital outputs</b>	
Type	SPST Relay
Nominal voltage	250 VAC
Electrical endurance	3·10 <sup>4</sup> operations
Rated Current	
With resistive load	6A 250VAC / 30VDC

Regulations	
	EN-61010-1
Installation	
	The equipment is installed on a DIN rail, leaving all the connections inside an electrical panel.
	The equipment must be connected to a power circuit protected with type GL (IEC 269) or type M fuses, between 0.5 and 2 A. A magneto-thermal switch or equivalent device must be provided to disconnect the equipment from the power network. The equipment's power circuit will be connected with a cable with a section between 1 mm <sup>2</sup> and 2.5 mm <sup>2</sup> , the outputs with a 1.5 mm <sup>2</sup> cable and the inputs with a minimum 0.5 mm <sup>2</sup> cable.
Electrical wiring	
	The input type (NPN or PNP) is automatically detected. The two types of input can coexist in the same equipment, depending on where the return is connected.
NPN inputs	<p>The diagram illustrates the electrical connections for the SCIO 724 840 Multi I/O Hub. It features a terminal block at the top with terminals labeled 1, 2, 3, 4, B-, A+, V-, and V+. A 24 VDC power supply is connected to V- and V+. The B- and A+ terminals are connected to a central terminal block labeled GND, B-, and A+. The Digital Inputs (1-4) are connected to the B- and A+ terminals. The Modbus RS-485 connection is shown with two wires connected to the B- and A+ terminals. The Digital Outputs (S1, S2, C1, S3, S4, C2) are connected to four separate Load blocks. The Prog button is connected to the A+ terminal. The RX and TX status LEDs are shown with a checkmark next to TX.</p>

PNP inputs



**Leds**

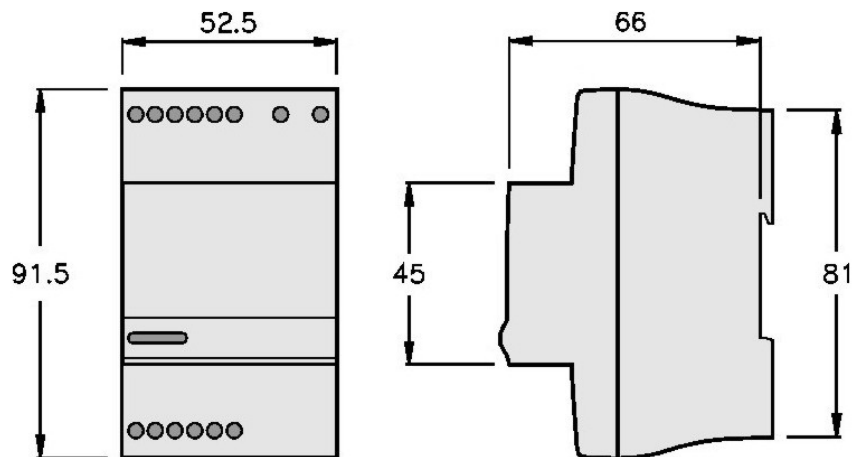


**Power** On if auxiliary power is provided to the equipment. If the Voltage is less than 18 V it will flash every 100ms.

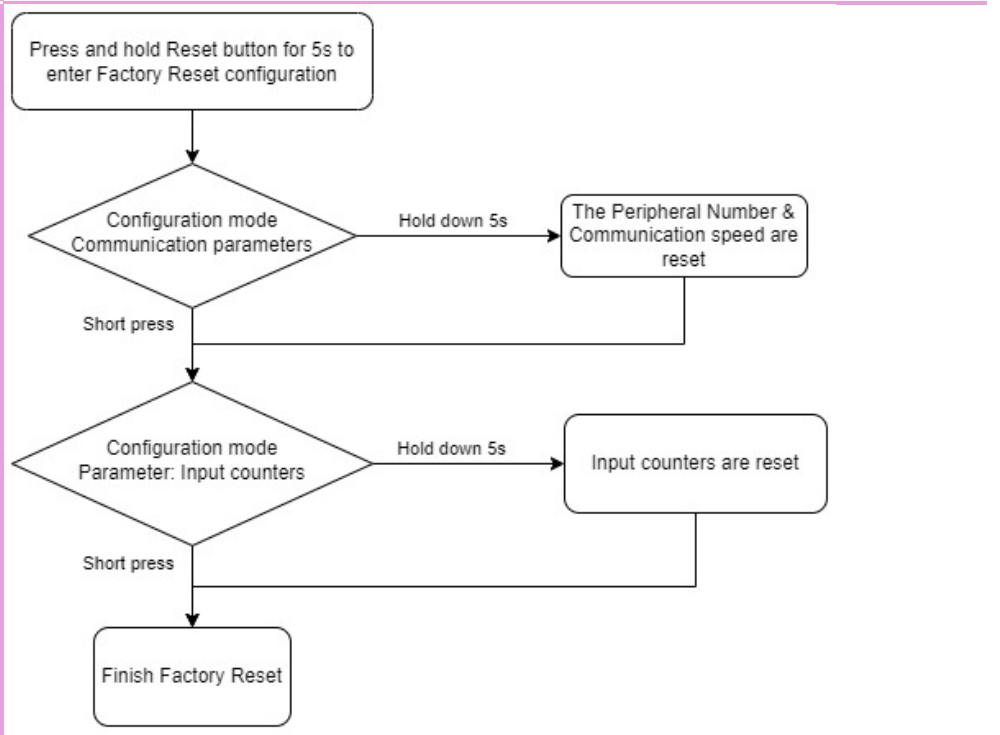
**RX** Blinking during RS-485 reception

**TX** Blinking during RS-485 transmission

**Dimensions**



<b>RS-485 communication</b>	
Factory settings	The equipment has an RS-485 type communication port for reading and writing the device parameters. To do this, the equipment uses the Modbus/RTU communication protocol. By default, it is configured with the peripheral number 33 (in hexadecimal 21) and communication speed 9600 bps, 8, E, 1. In addition, the termination resistance parameter is activated and the input bounce delay is 5 ms. All these parameters are configurable. The default parameters are indicated in bold in the memory map.
Factory reset	Using the PROG button located on the front of the device, you can recover the factory settings: <ol style="list-style-type: none"> <li>1. With the equipment running, if you press the button for 5 seconds you enter configuration mode. LED1 flashes every 500ms.</li> <li>2. If the button is kept pressed for 5 seconds, the device number (21h=33d) and the communication parameters (9600,8,E,1) are recovered. If you press briefly (less than 5s), the input counters are configured. After both cases, LED2 flashes indicating that you move on to the next configuration.</li> <li>3. A long press resets the counters of the 4 inputs. A short press completes the factory settings recovery process.</li> </ol> If 15 seconds of inactivity pass during the reset process, the process will abort.



**Modbus RTU memory map**

Magnitude	Input registers	Unit	Nº Bytes	Function
Peripheral Nº	0x0000	1 .. <b>33</b> .. 255	1	3,6
COM_Setup	0x0001	<b>0: 9600,8,E,1</b> 1:19200,8,E,1 2:9600,8,E,2 3:19200,8,N,2 4:9600,8,N,1 5:19200,8,N,1	1	3,6
TAG	0x0002	ASCII	16	3
Temperature	0x0006	IEEE754 (°C)	2	4
RS-485 Termination	0x001A	<b>0: No termination resistance</b> <b>1: Termination resistance</b>	1	3,6
Delay bounces inputs	0x001B	0 .. <b>5</b> .. 3276 (ms) Hexadecimal	1	3,6
ID manufacturer	0x0027	Hexadecimal	2	4
ID ProductCode	0x0029	Hexadecimal	2	3
HW version	0x0032	Hexadecimal. 0x100 = 1.0 version	1	4
SW version	0x0033	Hexadecimal. 0x100 = 1.0 version	1	4
Model Production	0x0036	Hexadecimal	2	3
Configuration	0x003C	Hexadecimal	1	4
Reference	0x0042	ASCII	50	4
Input counter 1	0x0100	Hexadecimal	2	4
Input counter 2	0x0102	Hexadecimal	2	4
Input counter 3	0x0104	Hexadecimal	2	4
Input counter 4	0x0106	Hexadecimal	2	4
Output status (1..4)	0x1000	0000: Inputs inactives 0001: Input 1 active 0003: Inputs 1 & 2 activated BIN0001: Lowest weight bit E1 Bin1000: Highest weight bit E4	1	3,6
Input status (1..4)	0x2000	0000: Outputs inactives 0001: Output 1 active 0003: Outputs 1 & 2 activated BIN0001: Minor weight bit E1 Bin1000: Major weight bit E4	1	4