

Data Representation on Modbus RTU

General

The Input- and Output Data areas are mapped to Modbus registers 0... 1279 and Coils 0... 20479.

Supported Function Codes

The following function codes are supported:

Function Code	Modbus Function	Associated with Area(s)
1	Read Coil	Input- and Output Data Area (0x000... 0x3FF)
2	Read Input Discretes	
3	Read Holding Registers	
4	Read Input Registers	
5	Write Coil	Output Data Area (0x200... 0x3FF)
6	Write Single Register	
15	Force Multiple Coils	
16	Force Multiple Registers	
22	Mask Write Register	
23	Read/Write Registers	Input- and Output Data Area (0x000... 0x3FF)

Coil & Register Map

The Input & Output Data areas are mapped to coils and registers as follows:

Register #	Coil #	Memory Location	Area	Comments
1	1... 16	0x000... 0x001	Input Data area	-
2	17... 32	0x002... 0x003		
...	...	...		
255	4065... 4080	0x1FC... 0x1FD		
256	4081... 4096	0x1FE... 0x1FF		
257... 1024	4097... 16384	-	-	(reserved)
1025	16385... 16400	0x200... 0x201	Output Data area	-
1026	16401... 16416	0x202... 0x203		
...	...	...		
1279	20449... 20464	0x3FC... 0x3FD		
1280	20465... 20480	0x3FE... 0x3FF		

Note: Coils are mapped MSB first, i.e. coil 0 corresponds to bit 15 of register 0.

Supported Exception Codes

Exception Code	Name	Description
0x01	Illegal function	Function code not supported
0x02	Illegal data address	Invalid address in query
0x03	Illegal data value	Illegal data in request