Specification

Supply voltage	24Vac/dc ±10%
Supply current	8VA (331mA @24Vac)
Inputs *8 x Universal (12-bit resolution)*	
	0-10Vdc
	Thermistor, type B (10K4A1)
	On/off (VFC)
	4-20mA
2 x Digital	Normally open/closed or direct/ reverse
Outputs	
2 x Universal (12-bit resolution)	
	0-10Vdc
	Pulsed signal (20mA drive)
	On/off
	4-20mA
2 x Analogue (12-bit resolution)	
	0-10Vdc
6 x Digital	Normally open/closed, independent common per relay, 5(4) @24V
BACnet	BACnet MS/TP (BAS-C): 9k6, 19k2, 38k4 or 76k8 bps or auto baud rate detection
Modbus	Modbus RTU Slave @ 9k6, 19k2, 38k4 or 57k6 Selectable parity and stop bit conf No parity, 2 stop bit Even parity, 1 stop bit Odd parity, 1 stop bit
Connections:	
Communication	0.2mm² twisted-shield cable
Electrical	0.8mm² at least
Ambient:	
Temperature	0 to +50°C
RH	5 to 95% non-condensing
Housing:	
Material	ABS
Dimensions	160 x 126 x 57mm
Protection	IP30
Country of origin	Canada
Conformity	EMC, CE & UKCA Marked

WEEE Directive:

At the end of the products useful life please dispose as per the local regulations.
Do not dispose of with normal household waste.
Do not burn.

Network Connections

Please note that all jumper settings must also be set to the same value through BACnet or Modbus. The following is a list of conditions and additional BACnet or Modbus objects.

Universal Inputs (AI1-AI8)

- When the jumper is set to Thermistor, you can select either sensor °C or sensor °F, or you can set the input as a digital on/off input.
- If the universal input is set as a digital on/off input, you can also set the polarity to direct or reverse. For example, in Reverse an “on” signal would be recognized as an “off” signal.
- When the jumper is set to 0-10Vdc, you can also set the range to 0-5Vdc.

Digital Inputs (DI1-DI2)

- You can set the polarity to direct or reverse. For example, in Reverse an “on” signal would be recognized as an “off” signal.

Universal/Analogue Outputs (AO1-AO4)

- You can set the polarity to direct or reverse. For example, in reverse the output range would be 10-0Vdc instead of 0-10Vdc. The polarity applies to all settings 0-10Vdc, 4-20mA, on/off and pulsed.
- You can also set the outputs to pulsed or digital on/off.
- A fixed output value can only be modified via BACnet when the override switch is in the “Automatic” position.

Digital Outputs (DO1-DO6)

- A fixed output (open/closed) can only be modified via BACnet when the override switch is in the “Automatic” position.
- The displayed text can be set to either Open/Closed, On/Off, or Alarm/Normal (BACnet only).

Supervised Outputs

- All outputs are fully supervised via BACnet. This provides the actual state of the output including any manual overrides done using the on-board switches.

LED Indication

Function	LED status	Description
Power	On	Input voltage normal
	Off	No power
Status	Flashing	Normal operation (watchdog)
RX/TX (BACnet and	Flashing	Receiving (RX) and/or transmitting (TX) data
Input Status	On	Input On
	Off	Input Off
	Flashing	Input not connected (thermistor setting only)
	Analogue	When Universal Inputs are set to analogue values (Vdc, mA, or 10KΩ); the LED intensity corresponds to the input value. For example: At 10Vdc, the LED will be fully on. At
Output Status	On	Activated
	Off	Deactivated
	Flashing	Output pulsed
	Analogue	When Universal and Analogue outputs are set to analogue values (Vdc or mA); the LED intensity corresponds to the output value. For example: At 10Vdc, the LED will be

MAC Address Settings

Use DS2 for setting MAC address for BACnet and Modbus

BACnet:
Default setting: All switches OFF (MAC address = 0)
If you do not change device instance in program mode, it will be automatically modified according to the MAC address

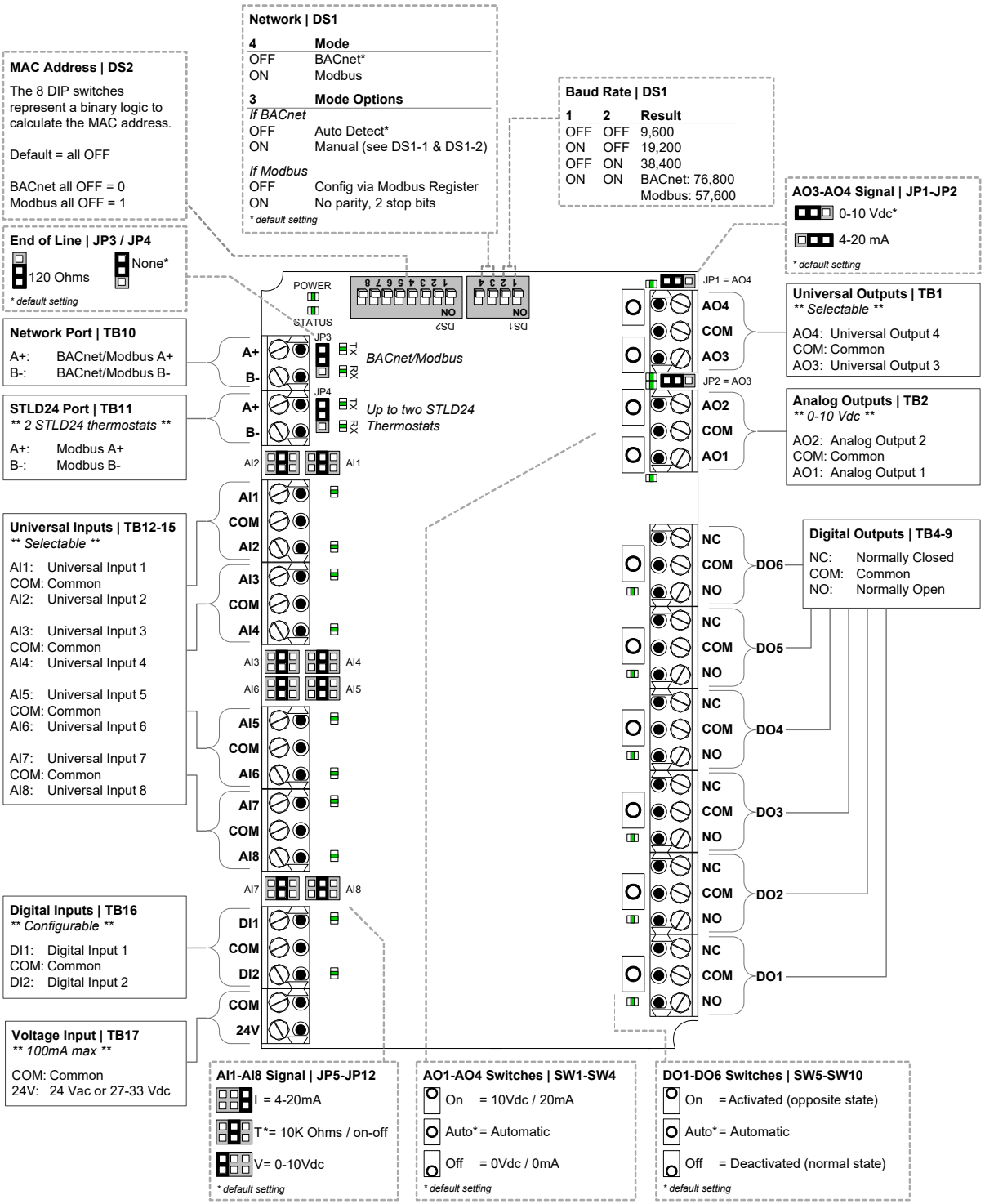
MAC Address	DS.1 = **1**	DS.2 = **2**	DS.3 = **4**	DS.4 = **8**	DS.5 = **16**	DS.6 = **32**	DS.7 = **64**	DS.8 = **128**	**Default Device Instance**
0	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	662000
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	662001
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	662002
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	662003
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	662004
…	…	…	…	…	…	…	…	...	...
126	OFF	ON	ON	ON	ON	ON	ON	OFF	662126
...	…	…	…	…	…	…	…	...	...
254	OFF	ON	ON	ON	ON	ON	ON	ON	662254

Modbus:
Default setting: All switches OFF (MAC address = 0)
MAC address is binary value plus 1

MAC Address	DS.1 = **1**	DS.2 = **2**	DS.3 = **4**	DS.4 = **8**	DS.5 = **16**	DS.6 = **32**	DS.7 = **64**	DS.8 = **128**
0+1 = 1	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1+1 = 2	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2+1 = 3	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3+1 = 4	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4+1 = 5	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
…	…	…	…	…	…	…	…	…
126+1 = 127	OFF	ON	ON	ON	ON	ON	ON	OFF
…	…	…	…	…	…	…	…	…
246+1 = 247	OFF	ON	ON	OFF	ON	ON	ON	ON

Installation & Configuration

Please make sure that all jumper settings are set to the same values as those in the configurable BACnet objects / Modbus register. Some additional configurations are only available via BACnet (see section Network Conditions)



BACnet Objects Table

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
AI.1	UniversalInput1	Universal input 1 mode selected by MSV.1	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.2	UniversalInput2	Universal input 2 mode selected by MSV.12	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.3	UniversalInput3	Universal input 3 mode selected by MSV.15	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.4	UniversalInput4	Universal input 4 mode selected by MSV.48	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.5	UniversalInput5	Universal input 5 mode selected by MSV.57	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.6	UniversalInput6	Universal input 6 mode selected by MSV.58	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.7	UniversalInput7	Universal input 7 mode selected by MSV.59	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AI.8	UniversalInput8	Universal input 8 mode selected by MSV.60	Out of service	0 to 10Volt or -40 to 100ºC (150ºC)† or -40 to 212ºF (302ºF)† or 4 to 20mA or 0 to 1Resolution: 0.01Volt or 0.01ºC/0.02ºF or 0.01mA or 1
AV.52	AnalogOutput1Min	Min. voltage of analog output 1	Present Value	0* Volt to AV.54 | Resolution 0.1 Volt
AV.53	AnalogOutput2Min	Min. voltage of analog output 2	Present Value	0* Volt to AV.55 | Resolution 0.1 Volt
AV.54	AnalogOutput1Max	Max. voltage of analog output 1	Present Value	AV.52 to 10.0* Volt | Resolution 0.1 Volt
AV.55	AnalogOutput2Max	Max. voltage of analog output 2	Present Value	AV.53 to 10.0* Volt | Resolution 0.1 Volt
AV.72	AnalogOutput1	Analog output 1 value	Present Value	0-100% | Resolution 0.1%

1 ID is equal to ObjectType.Instance

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
AV.73	AnalogOutput2	Analog output 2 value	Present Value	0-100% | Resolution 0.1%
AV.118	AnalogOutput3Min	Min. voltage of analog output 3	Present Value	0* Volt to AV.120 | Resolution 0.1 Volt
AV.119	AnalogOutput4Min	Min. voltage of analog output 4	Present Value	0* Volt to AV.121 | Resolution 0.1 Volt
AV.120	AnalogOutput3Max	Max. voltage of analog output 3	Present Value	AV.118 to 10.0* Volt | Resolution 0.1 Volt
AV.121	AnalogOutput4Max	Max. voltage of analog output 4	Present Value	AV.119 to 10.0* Volt | Resolution 0.1 Volt
AV.124	AnalogOutput3	Analog output 3 value	Present Value	0-100% | Resolution 1%
AV.125	AnalogOutput4	Analog output 4 value	Present Value	0-100% | Resolution 1%
AV.226	UniversalInput1Offset	Universal input 1 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.227	UniversalInput2Offset	Universal input 2 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.228	UniversalInput3Offset	Universal input 3 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.229	UniversalInput4Offset	Universal input 4 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.230	UniversalInput5Offset	Universal input 5 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.231	UniversalInput6Offset	Universal input 6 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.232	UniversalInput7Offset	Universal input 7 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.233	UniversalInput8Offset	Universal input 8 offset	Present Value	-5.00 to 5.00 ºC/ºF/Volt/mA (default 0*) Resolution: 0.01 ºC/ºF/Volt/mA
AV.500	U1_MinInputValue	Universal input 1 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.501	U1_MaxInputValue	Universal input 1 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.502	U1_MinValue	Universal input 1 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.503	U1_MaxValue	Universal input 1 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.504	U2_MinInputValue	Universal input 2 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.505	U2_MaxInputValue	Universal input 2 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.506	U2_MinValue	Universal input 2 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.507	U2_MaxValue	Universal input 2 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.508	U3_MinInputValue	Universal input 3 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.509	U3_MaxInputValue	Universal input 3 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.510	U3_MinValue	Universal input 3 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.511	U3_MaxValue	Universal input 3 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.512	U4_MinInputValue	Universal input 4 minimum input value	Present Value	0-10Volt or 4-20mA, Resolu- tion: 0.01Volt or 0.01mA
AV.513	U4_MaxInputValue	Universal input 4 maximum input value	Present Value	0-10Volt or 4-20mA, Resolu- tion: 0.01Volt or 0.01mA
AV.514	U4_MinValue	Universal input 4 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.515	U4_MaxValue	Universal input 4 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.516	U5_MinInputValue	Universal input 5 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.517	U5_MaxInputValue	Universal input 5 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.518	U5_MinValue	Universal input 5 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
AV.519	U5_MaxValue	Universal input 5 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.520	U6_MinInputValue	Universal input 6 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.521	U6_MaxInputValue	Universal input 6 maximum input value	Present Value	0-10Volt or 4-20mA, Resolu- tion: 0.01Volt or 0.01mA
AV.522	U6_MinValue	Universal input 6 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.523	U6_MaxValue	Universal input 6 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.524	U7_MinInputValue	Universal input 7 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.525	U7_MaxInputValue	Universal input 7 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.526	U7_MinValue	Universal input 7 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.527	U7_MaxValue	Universal input 7 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.528	U8_MinInputValue	Universal input 8 minimum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.529	U8_MaxInputValue	Universal input 8 maximum input value	Present Value	0-10Volt or 4-20mA, Resolution: 0.01Volt or 0.01mA
AV.530	U8_MinValue	Universal input 8 minimum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
AV.531	U8_MaxValue	Universal input 8 maximum scaled value	Present Value	-32768 to 32767, Resolution: 0.01
BI.1	DigitalInput1	Digital input 1 status	Out of service	0= Open / Ouvert * 1= Close / Fermé Text depends of selection in MSV.76
BI.2	DigitalInput2	Digital input 2 status	Out of service	0= Open / Ouvert * 1= Close / Fermé Text depends of selection in MSV.77
BV.22	ContactOutput1	Digital output 1 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.66
BV.23	ContactOutput2	Digital output 2 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.67
BV.24	ContactOutput3	Digital output 3 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.68
BV.25	ContactOutput4	Digital output 4 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.69
BV.26	ContactOutput5	Digital output 5 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.70
BV.27	ContactOutput6	Digital output 6 status	Present Value	0= Open / Ouvert / Off / Arret / Normal * 1= Close / Fermé / On / Marche / Alarm Text depends of selection in MSV.71
BV.33	DigitalInput1Polarity	Polarity of digital input 1	Present Value	0= Direct * 1= Reverse
BV.34	DigitalInput2Polarity	Polarity of digital input 2	Present Value	0= Direct * 1= Reverse
BV.66	AnalogOutput1Direction	Polarity of analog output 1	Present Value	0= Direct * 1= Reverse

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
BV.67	AnalogOutput2Direction	Polarity of analog output 2	Present Value	0= Direct * 1= Reverse
BV.68	AnalogOutput3Direction	Polarity of analog output 3	Present Value	0= Direct * 1= Reverse
BV.69	AnalogOutput4Direction	Polarity of analog output 4	Present Value	0= Direct * 1= Reverse
BV.93	UI1_DI_Polarity	Polarity of universal input 1 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.94	UI2_DI_Polarity	Polarity of universal input 2 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.95	UI3_DI_Polarity	Polarity of universal input 3 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.96	UI4_DI_Polarity	Polarity of universal input 4 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.97	UI5_DI_Polarity	Polarity of universal input 5 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.98	UI6_DI_Polarity	Polarity of universal input 6 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.99	UI7_DI_Polarity	Polarity of universal input 7 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.100	UI8_DI_Polarity	Polarity of universal input 8 when used in digital input mode	Present Value	0= Direct * 1= Reverse
BV.101	CopyCfgExecute	Start or stop copy configuration	Present Value	0= No * 1= Yes Start copy and give results, must be reset by user.
BV.102	SystemUnit	Select the unit system to use on the device	Present Value	0= Celsius * 1= Fahrenheit
BV.103	Inhibit Output Override	Inhibit the override of the outputs	Present Value	0= Off * 1= On
MSV.1	UniversalInput1Function	Selected analog input 1 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.12	UniversalInput2Function	Selected analog input 2 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.15	UniversalInput3Function	Selected analog input 3 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
MSV.48	UniversalInput4Function	Selected analog input 4 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.54	AnalogOutput1Mode	Select analog output 1 mode	Present Value	1= Analog * 2= On_Off 3= Pulsing
MSV.55	AnalogOutput2Mode	Select analog output 2 mode	Present Value	1= Analog * 2= On_Off 3= Pulsing
MSV.57	UniversalInput5Function	Selected analog input 5 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.58	UniversalInput6unction	Selected analog input 6 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.58	UniversalInput6unction	Selected analog input 6 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.59	UniversalInput7Function	Selected analog input 7 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA

ID[1]	Name	Description	Writable?	Notes (* = default) († = only when *UniversalInputxFunction* isset to *10K_Type3/G*)
MSV.60	UniversalInput8Function	Selected analog input 8 mode	Present Value	1= 0_10Volt 2= 4_20mA 3= 10K_Type3/G * 4= 10K_Type3A1 5= 10K_Type4A1 6= 10K_Type2 7= 20K_Type6A1 8= 30K_Type6A1 9= DigitalInput 10= ScaledValue_Volt 11= ScaledValue_mA
MSV.66	ContactOutput1Text	Contact output 1 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.67	ContactOutput2Text	Contact output 2 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.68	ContactOutput3Text	Contact output 3 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.69	ContactOutput4Text	Contact output 4 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.70	ContactOutput5Text	Contact output 5 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.71	ContactOutput6Text	Contact output 6 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé 3= On_Off 4= Marche_Arret 5= Alarm_Normal
MSV.76	DigitalInput1Text	Digital input 1 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé
MSV.77	DigitalInput2Text	Digital input 2 inactive & active text	Present Value	1= Open_Close * 2= Ouvert_Fermé
MSV.81	AnalogOutput3Mode	Select analog output 3 mode	Present Value	1= Analog * 2= On_Off 3= Pulsing 4= 4_20mA
MSV.82	AnalogOutput4Mode	Select analog output 4 mode	Present Value	1= Analog * 2= On_Off 3= Pulsing 4= 4_20mA

Modbus Register

- Register address
  As per protocol base (base 0); for PLC add 1 to protocol base.
  As per holding register (base 40001)
- Functions:
  03 Read Holding Register
  06 Write Single Register
  16 Write Multiple Registers
- Error Codes:
  02 Illegal Data Address
  03 Illegal Value
  06 Slave Device Busy

- W = Writable register, [blank] = read only.
- No Real number in ModBus register, use scale to calculate real number. Register = Real number * Scale => Real number = Register / Scale. Scale could be 1, 10 or 100
- Attention when writing a register that contains a bit string. If bit is writable (conditional or not), the write will always be accepted. If bit is reserved or not writable, the write will be ignored and will keep its actual state.
- Use READ-MODIFY-WRITE sequence.

Protocol Base	Holding Register	Description	Data Type	MSB/LSB		Units/Values	Writable	Default Value	
								MB	LB
0	40001	MSB = Sontay Device ID LSB = MAC Address	Unsigned	105 (69h)	[1..247] (1h- F7h)	* MAC address is writable if all DIP switches of DS2 are OFF.	W*	69h	1h
1	40002	Device Baud Rate	Unsigned Scale 0.01	[96] [192] [384] [576]		9,600 19,200 38,400 57,600	W	96	
2	40003	COM Port Configuration **IMPORTANT**: The default value is "no parity, 2 stop bits". To change the value, you must set DIP switch DS1-3 to OFF. If set to ON, it will always remain at the default value. Refer to Connections and Configurations on page 2.	Unsigned	[0..2]		0 = no parity, 2 stop bits 1 = even parity, 1 stop bit2 = odd parity, 1 stop bit	W	0	
3	40004	Product Name (characters 8 & 7)	2 x ASCII	char 8	char 7	Valid ASCII character: 32 (20h) – 122 (7ah), Empty = 0	W	43h [C]	40h [M]
4	40005	Product Name (characters 6 & 5)	2 x ASCII	char 6	char 5	Valid ASCII character: 32 (20h) – 122 (7ah), Empty = 0	W	40h [M]	42h [B]
5	40006	Product Name (characters 4 & 3)	2 x ASCII	char 4	char 3	Valid ASCII character: 32 (20h) – 122 (7ah), Empty = 0	W	31h [1]	30h [0]
6	40007	Product Name (characters 2 & 1)	2 x ASCII	char 2	char 1	Valid ASCII character: 32 (20h) – 122 (7ah), Empty = 0	W	36h [6]	20h [ ]
7	40008	Firmware Version	Unsigned Scale 100	112		1.12		112	
8	40009	Application Version	Unsigned Scale 100	103		1.03		103	

Protocol Base	Holding Register	Description	Data Type	MSB/LSB	Units/Values	Writable	Default Value	
							MB	LB
9	40010	System Status 1	Bit String	[B0..B15]	0 = Normal 1 = Fault - - - - - - - - - - - - - - - - - - B0 = System operation		0000, 0001, 1111, 1110b	
10	40011	System Status 2	Bit String	[B0..B15]	Always 0		0000, 0000, 0000, 0000b	
11	40012	Analog Input 1	0-10V: Type: Unsigned, Scale:100, Unit: Volt, Range: 0.00-10.00V, Resolution: 0.01 4-20mA: Type: Unsigned, Scale:100, Unit: mA, Range: 4.00-20.00 mA, Resolution: 0.01 10K Type 3A1, 10K Type 4AI, 10K Type 2, 20K Type 6AI, 30K Type 6AI: Type: Signed, Scale:100, Unit: ºC, Range: -40.00 - 100.00 ºC, Resolution: 0.01 Type: Signed, Scale:100, Unit: ºF, Range: -40.00 - 212.00 ºF, Resolution: 0.02 10K Type 3/G: Type: Signed, Scale:100, Unit: ºC, Range: -40.00 - 150.00 ºC, Resolution: 0.01 Type: Signed, Scale:100, Unit: ºF, Range: -40.00 - 302.00 ºF, Resolution: 0.02 DI: Type: Unsigned, Scale:1, No Unit, Range: 0-1, Resolution: 1 Scaled Input (Volt), Scaled Input (mA): Type: Unsigned, Scale:1 , No Unit, Range: Ux_MinValue - Ux_MaxValue, Resolution: 1				32767	
12	40013	Analog Input 2						32767
13	40014	Analog Input 3						32767
14	40015	Analog Input 4						32767
15	40016	Analog Input 5						32767
16	40017	Analog Input 6						32767
17	40018	Analog Input 7						32767
18	40019	Analog Input 8						32767
19	40020	Digital Input	Bit String	[B0..B1]	B0 = DI1 B1 = DI2		0000, 0000, 0000, 0000b	
20	40021	Analog Output 1	Unsigned Scale 10	[0..1000]	Unit: %, Range: 0-100.0%, Resolution: 0.1	W	0	
21	40022	Analog Output 2					0	
22	40023	Analog Output 3					0	
23	40024	Analog Output 4					0	
24	40025	Relay Output	Bit String	[B0..B5]	B0 = Relay 1 B1 = Relay 2 B2 = Relay 3 B3 = Relay 4 B4 = Relay 5 B5 = Relay 6	W	0000, 0000, 0000, 0000b	

Protocol Base	Holding Register	Description	Data Type	MSB/LSB	Units/Values	Writable	Default Value	
							MB	LB
25	40026	Output Overwrite Status *Indicates that the output is overridden by the hardware switch (SW5-SW10).*	Bit String	[B0..B9]	B0 = Relay 1 B1 = Relay 2 B2 = Relay 3 B3 = Relay 4 B4 = Relay 5 B5 = Relay 6 B6 = AO1 B7 = AO2 B8 = AO3 B9 = AO4		0000, 0000, 0000, 0000b	
26	40027	Universal Input 1 Function	Unsigned	[1..11]	1 = 0-10V, 2 = 4-20 mA, 3 = 10K Type 3/G, 4 = 10K Type 3A1, 5 = 10K Type 4A1, 6 = 10K Type 2, 7 = 20K Type 6A1, 8 = 30K Type 6A1, 9 = Digital Input, 10 = Scaled Input (Volt), 11 = Scaled Input (mA)	W	3	
27	40028	Universal Input 2 Function					3	
28	40029	Universal Input 3 Function					3	
29	40030	Universal Input 4 Function					3	
30	40031	Universal Input 5 Function					3	
31	40032	Universal Input 6 Function					3	
32	40033	Universal Input 7 Function					3	
33	40034	Universal Input 8 Function					3	
34	40035	Universal Input 1 Offset	Signed Scale 100	[-500..500]	Range: +/- 5.00, Resolution: 0.10	W	0	
35	40036	Universal Input 2 Offset					0	
36	40037	Universal Input 3 Offset					0	
37	40038	Universal Input 4 Offset					0	
38	40039	Universal Input 5 Offset					0	
39	40040	Universal Input 6 Offset					0	
40	40041	Universal Input 7 Offset					0	
41	40042	Universal Input 8 Offset					0	
42	40043	Analog Output 1 Mode	Unsigned	[1..3]	1 = Analog 2 = On/Off 3 = Pulse	W	1	
43	40044	Analog Output 1 Minimum Voltage	Signed Scale 10	[0..100]	Unit: Volt, Range: 0 V - Register 44, Resolution: 0.1	W	0	
44	40045	Analog Output 1 Maximum Voltage			Unit: Volt, Range: Register 43 - 10.0V, Resolution: 0.1		100	
45	40046	Analog Output 2 Mode	Unsigned	[1..3]	1 = Analog 2 = On/Off 3 = Pulse	W	1	

Protocol Base	Holding Register	Description	Data Type	MSB/LSB	Units/Values	Writable	Default Value	
							MB	LB
46	40047	Analog Output 2 Minimum Voltage	Signed Scale 10	[0..100]	Unit: Volt, Range: 0 V - Register 47, Resolution: 0.1	W	0	
47	40048	Analog Output 2 Maximum Voltage			Unit: Volt, Range: Register 46 - 10.0V, Resolution: 0.1		100	
48	40049	Analog Output 3 Mode	Unsigned	[1..4]	1 = Analog 2 = On/Off 3 = Pulse 4 = 4-20mA	W	1	
49	40050	Analog Output 3 Minimum Voltage	Signed Scale 10	[0..100]	Unit: Volt, Range: 0 V - Register 50, Resolution: 0.1	W	0	
50	40051	Analog Output 3 Maximum Voltage			Unit: Volt, Range: Register 49 - 10.0V, Resolution: 0.1		100	
51	40052	Analog Output 4 Mode	Unsigned	[1..4]	1 = Analog 2 = On/Off 3 = Pulse 4 = 4-20mA	W	1	
52	40053	Analog Output 4 Minimum Voltage	Signed Scale 10	[0..100]	Unit: Volt, Range: 0 V - Register 53, Resolution: 0.1	W	0	
53	40054	Analog Output 4 Maximum Voltage			Unit: Volt, Range: Register 52 - 10.0V, Resolution: 0.1		100	
54	40055	System Options ** = digital input mode only*	Bit String	[B0..B15]	0 = Direct 1 = Reverse - - - - - - - - - - - - - - - - - - B0 = AO1 polarity B1 = AO2 polarity B2 = AO3 polarity B3 = AO4 polarity B4 = AI1 polarity * B5 = AI2 polarity * B6 = AI3 polarity * B7 = AI4 polarity * B8 = AI5 polarity * B9 = AI6 polarity * B10 = AI7 polarity * B11 = AI8 polarity * B12 = DI1 polarity B13 = DI2 polarity 0 = Off 1 = On - - - - - - - - - - - - - - - - - - B14 = Inhibit Output Override - - - - - - - - - - - - - - - - - - 0 = Celsius 1 = Fahrenheit - - - - - - - - - - - - - - - - - - B15 = System Unit	W	0000, 0000, 0000, 0000b	
55	40056	Universal Input 1 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 56, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 56, Resolution: 0.01	W	0	
56	40057	Universal Input 1 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 55 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 55 – 20.00 mA, Resolution: 0.01	W	1000	
57	40058	Universal Input 1 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 58, Resolution: 0.01	W	0	
58	40059	Universal Input 1 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 57 - 32767, Resolution: 0.01	W	1000	

Protocol Base	Holding Register	Description	Data Type	MSB/LSB	Units/Values	Writable	Default Value	
							MB	LB
59	40060	Universal Input 2 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 60, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 60, Resolution: 0.01	W	0	
60	40061	Universal Input 2 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 59 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 59 – 20.00 mA, Resolution: 0.01	W	1000	
61	40062	Universal Input 2 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 62, Resolution: 0.01	W	0	
62	40063	Universal Input 2 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 61 - 32767, Resolution: 0.01	W	1000	
63	40064	Universal Input 3 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 64, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 64, Resolution: 0.01	W	0	
64	40065	Universal Input 3 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 63 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 63 – 20.00 mA, Resolution: 0.01	W	1000	
65	40066	Universal Input 3 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 66, Resolution: 0.01	W	0	
66	40067	Universal Input 3 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 65 - 32767, Resolution: 0.01	W	1000	
67	40068	Universal Input 4 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 68, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 68, Resolution: 0.01	W	0	
68	40069	Universal Input 4 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 67 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 67 – 20.00 mA, Resolution: 0.01	W	1000	
69	40070	Universal Input 4 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 70, Resolution: 0.01	W	0	
70	40071	Universal Input 4 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 69 - 32767, Resolution: 0.01	W	1000	
71	40072	Universal Input 5 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 72, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 72, Resolution: 0.01	W	0	
72	40073	Universal Input 5 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 71 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 71 – 20.00 mA, Resolution: 0.01	W	1000	
73	40074	Universal Input 5 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 66, Resolution: 0.01	W	0	
74	40075	Universal Input 5 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 65 - 32767, Resolution: 0.01	W	1000	
75	40076	Universal Input 6 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 64, Resolution: 0.01 Unit: mA, Range : 4.00 mA - Register 64, Resolution: 0.01	W	0	
76	40077	Universal Input 6 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 63 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 63 – 20.00 mA, Resolution: 0.01	W	1000	
77	40078	Universal Input 6 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 78, Resolution: 0.01	W	0	
78	40079	Universal Input 6 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 77 - 32767, Resolution: 0.01	W	1000	

Protocol Base	Holding Register	Description	Data Type	MSB/LSB	Units/Values	Writable	Default Value	
							MB	LB
79	40080	Universal Input 7 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 80, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 80, Resolution: 0.01	W	0	
80	40081	Universal Input 7 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 79 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 79 – 20.00 mA, Resolution: 0.01	W	1000	
81	40082	Universal Input 7 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 82, Resolution: 0.01	W	0	
82	40083	Universal Input 7 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 81 - 32767, Resolution: 0.01	W	1000	
83	40084	Universal Input 8 Minimum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: 0.00 V - Register 84, Resolution: 0.01 Unit: mA, Range: 4.00 mA - Register 84, Resolution: 0.01	W	0	
84	40085	Universal Input 8 Maximum Input Value	Unsigned Scale 100	[0..100]	Unit: Volt, Range: Register 83 – 10.00 V, Resolution: 0.01 Unit: mA, Range: Register 83 – 20.00 mA, Resolution: 0.01	W	1000	
85	40086	Universal Input 8 Minimum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: -32768 - Register 86, Resolution: 0.01	W	0	
86	40087	Universal Input 8 Maximum Value	Signed Scale 1	[-32768…32767]	No Unit, Range: Register 85 - 32767, Resolution: 0.01	W	1000	

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