

Flosense 4.0 OPC UA Specification

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1. Overview

This specification is written for Flosense 4.0 based on EUROMAP 82.1 and EUROMAP 83. The conventions used in this document are described in OPC 40083. Please note that the type definitions might not comply with the EUROMAP standard. For the definitions and details that are not included in this document, please refer to OPC 40082-1 and OPC 40083.

2. Server Setting

2.1. Server Connection

2.1.1. Server Endpoint URL

Example: "opc.tcp://192.168.0.254:4840"

192.168.0.254 represents the device IP address.

4840 represents the OPC UA port number entered on the Network Setting screen.

2.1.2. Connection Parameters

Security Policy: None

Authentication: None

2.2. Namespace Setting

Table 1 - Namespace Setting

Namespace Index	Namespace	Description
0	http://opcfoundation.org/UA/	OPC UA specification
1	urn:Flosense4-0:<DeviceSerialNumber>	Local server specification. Example: urn:Flosense4-0:36160001100001C8
2	http://opcfoundation.org/UA/DI/	OPC UA Part 100 specification
3	http://opcfoundation.org/UA/PlasticsRubber/GeneralTypes/	EUROMAP 83 specification
4	http://opcfoundation.org/UA/PlasticsRubber/TCD/	EUROMAP 82.1 specification
5	http://mouldpro.com/Flosense4-0/	MouldPro Flosense 4.0 specification

3. Object Definition

Figure 1 - Object Instance Overview

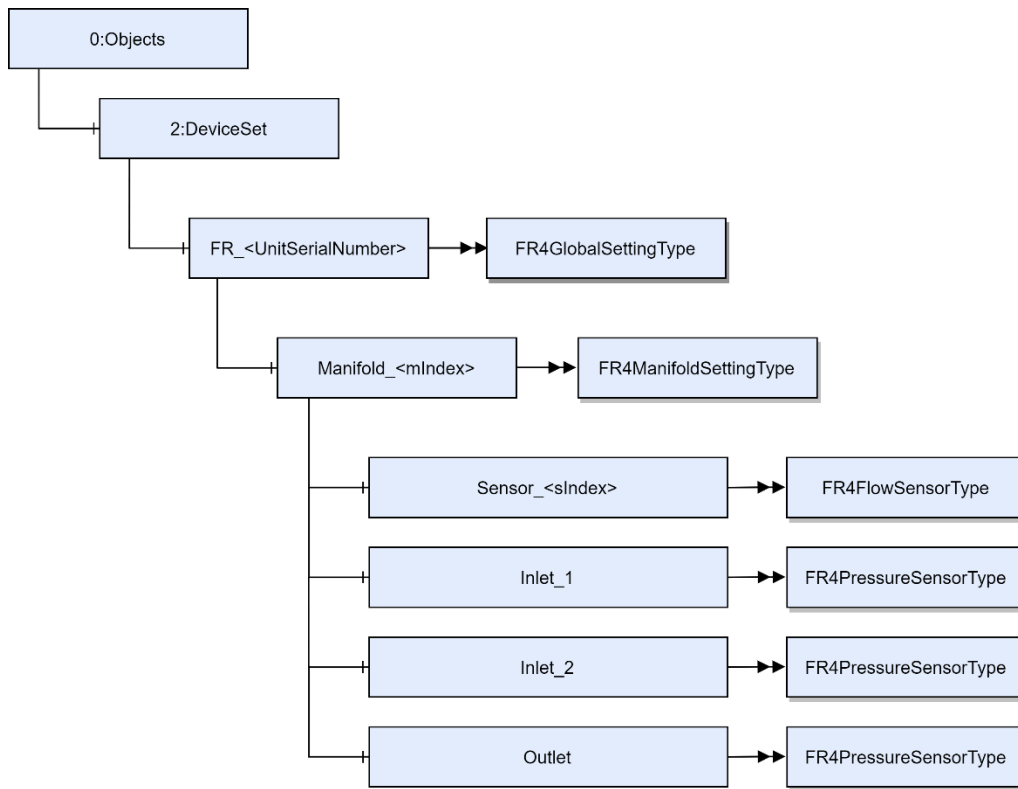


Table 2 - NodeID of Object

Namespace Index	Identifier (BrowseName)	Identifier Type	ObjectType	Description
5	FR_<UnitSerialNumber>	String	FR4GlobalSettingType	This object contains device information. The device serial number is displayed as Display ID on Product Information Screen. Example: FR_36160001100001C8
5	M<mIndex> (Manifold_<mIndex>)	String	FR4ManifoldSettingType	This object contains manifold information. For 4 manifolds, <i>mIndex</i> range is 1 to 4. Identifier Example: M1 BrowseName Example: Manifold_1
5	M<mIndex>_S<sIndex> (Sensor_<sIndex>)	String	FR4FlowSensorType	For 4 12-zone manifolds, <i>mIndex</i> range is 1 to 4 and <i>sIndex</i> range is 1 to 12. Identifier Example: M1_S1 BrowseName Example: Sensor_1
5	M<mIndex>_<name> (<Bname>)	String	FR4PressureSensorType	For 4 manifolds each with 2 active pressure sensors, <i>mIndex</i> range is 1 to 4; <i>Bname</i> could be "Inlet_1", "Inlet_2" or "Outlet" and <i>name</i> is <i>Bname</i> without underscore. Identifier Example: M1_Inlet1 BrowseName Example: Inlet_1

4. ObjectType Definition

4.1. FR4GlobalSettingType

The 5:FR4GlobalSettingType defines the global setting of the Flosense device.

Figure 2 – FR4GlobalSetting Overview

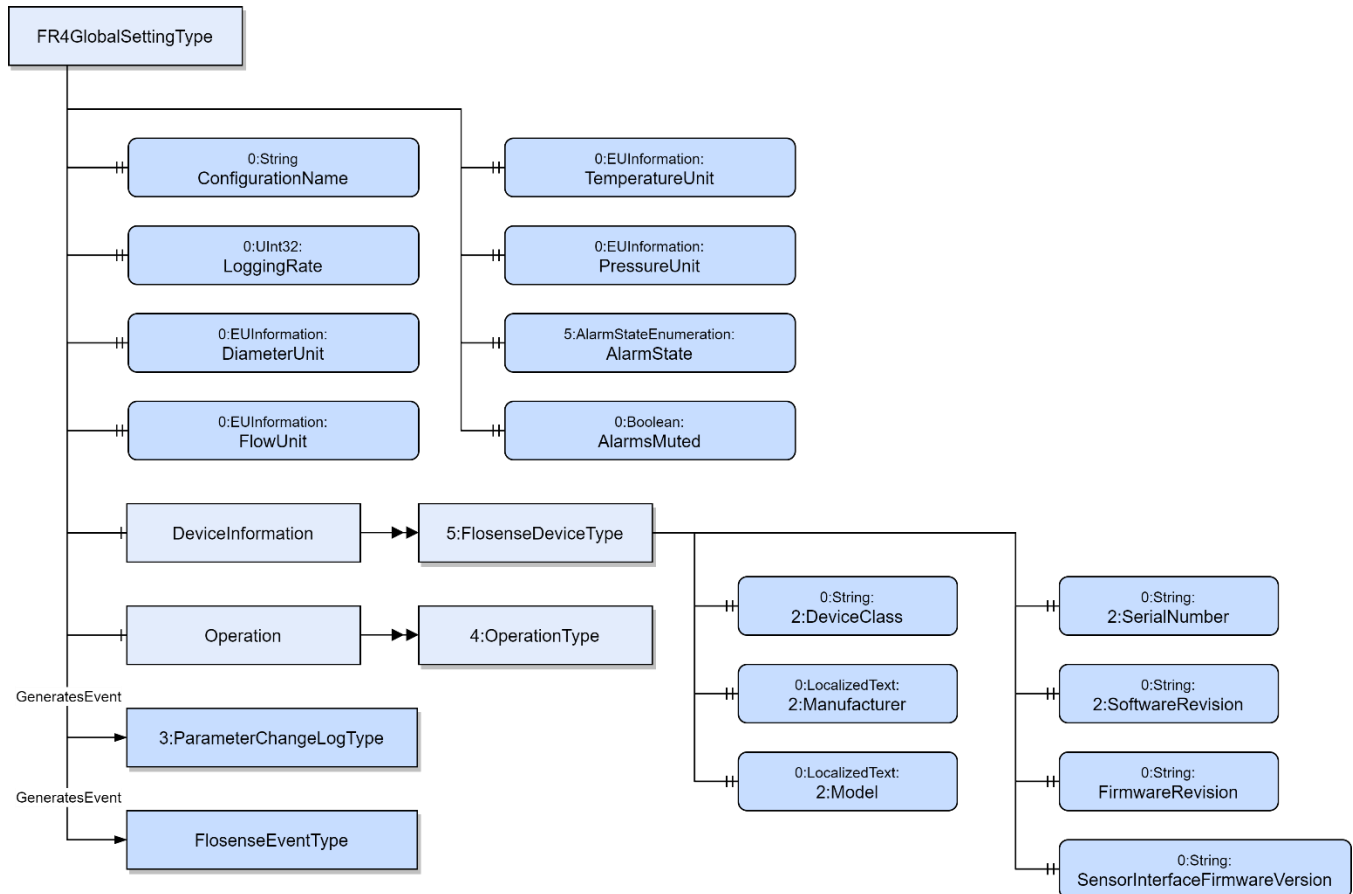


Table 3 - FR4GlobalSettingType Definition

Attribute	Value				
BrowseName	FR4GlobalSettingType				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 0:BaseObjectType defined in OPC UA Part 5					
0:HasComponent	Object	5:DeviceInformation		5:FlosenseDeviceType	M
0:HasComponent	Object	5:Operation		4:OperationType	M
0:HasProperty	Variable	5:ConfigurationName	0:String	0:PropertyType	M, RO
0:HasProperty	Variable	5:LoggingRate	0:UInt32	0:PropertyType	M, RW
0:HasProperty	Variable	5:DiameterUnit	0:EUIInformation	0:PropertyType	M, RW
0:HasProperty	Variable	5:FlowUnit	0:EUIInformation	0:PropertyType	M, RW
0:HasProperty	Variable	5:TemperatureUnit	0:EUIInformation	0:PropertyType	M, RW
0:HasProperty	Variable	5:PressureUnit	0:EUIInformation	0:PropertyType	M, RW
0:HasProperty	Variable	5:AlarmState	5:AlarmStateEnumeration	0:PropertyType	M, RO
0:HasProperty	Variable	5:AlarmsMuted	0:Boolean	0:PropertyType	M, RW
0:GeneratesEvent	ObjectType	3:ParameterChangeLogType			
0:GeneratesEvent	ObjectType	5:FlosenseEventType			

4.1.1. DeviceInformation

Description: The *DeviceInformation* contains the general information of the Flosense device.

4.1.2. Operation

Description: The *OperationType* is defined in OPC 40082-1.

4.1.3. ConfigurationName

Description: Current activated configuration name.

Example: Config 1

4.1.4. LoggingRate

Description: Current selected data logging rate (second).

Example: 15

4.1.5. DiameterUnit

Description: Current selected diameter unit (mm/inch).

Table 4 - Values for EngineeringUnits of Diameter

Unit	unitid	displayName	description
mm	5066068	mm	millimetre
inch	4804168	Inch	Inch

4.1.6. FlowUnit

Description: Current selected flow unit (LPM/GPM).

Table 5 - Values for EngineeringUnits of Flow

Unit	unitid	displayName	description
LPM	19506	l/min	litre per minute
GPM	18226	gal (US) /min	US gallon per minute

4.1.7. TemperatureUnit

Description: Current selected temperature unit (°C/°F).

Table 6 - Values for EngineeringUnits of Temperature

Unit	unitid	displayName	description
°C	4408652	°C	degree Celsius
°F	4604232	°F	degree Fahrenheit

4.1.8. PressureUnit

Description: Current selected pressure unit (bar/psi).

Table 7 - Values for EngineeringUnits of Pressure

Unit	unitid	displayName	description
bar	4342098	bar	bar [unit of pressure]
psi	13876	psi	pound per square inch gauge

4.1.9. AlarmState

Description: Current alarm state of the device.

Table 8 - Values for AlarmStateEnumeration

EnumValue	ValueAsText	Description
0	NO_ALARM	No alarm
1	WARNING	Warning alarm
2	FULL_ALARM	Full alarm

4.1.10. AlarmsMuted

Description: Current alarms muted state of the device (True – Alarms Muted On / False – Alarms Muted Off)

4.1.11. ParameterChangeLogType

Description: The *3:ParameterChangeLogType* defined in OPC 40083 is used for the logging of relevant changes in parameters.

4.1.12. FlosenseEventType

Description: The *5:FlosenseEventType* is used for the audit logging of relevant actions apart from the parameter changes.

Table 9 – FlosenseEventType Definition

Attribute	Value				
BrowseName	FlosenseEventType				
IsAbstract	True				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of <i>3:LogbookEventType</i> defined in OPC UA 40083					
0:HasProperty	Variable	5:ActionId	0:String	0:PropertyType	M

4.1.12.1. ActionId

Description: The event type of the audit log in Flosense device.

4.2. FlosenseDeviceType

The *5:FlosenseDeviceType* is extended from the *2:DeviceType* defined in OPC UA 10000-100 (Devices). It contains the general information of the Flosense device.

Table 10 – FlosenseDeviceType Definition

Attribute	Value				
BrowseName	FlosenseDeviceType				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of <i>2:DeviceType</i> defined in OPC UA 10000-100 (Devices)					
0:HasProperty	Variable	2:DeviceClass	0:String	0:PropertyType	O, RO
0:HasProperty	Variable	2:Manufacturer	0:LocalizedText	0:PropertyType	M, RO
0:HasProperty	Variable	2:Model	0:LocalizedText	0:PropertyType	M, RO
0:HasProperty	Variable	2:SerialNumber	0:String	0:PropertyType	M, RO
0:HasProperty	Variable	2:SoftwareRevision	0:String	0:PropertyType	O, RO
0:HasProperty	Variable	5:FirmwareRevision	0:String	0:PropertyType	O, RO
0:HasProperty	Variable	5:SensorInterfaceFirmwareVersion	0:String	0:PropertyType	O, RO

The value is -1 or NULL if the property of *5:FlosenseDeviceType* is not supported.

The parameters that are included in the *2:DeviceType*:

4.2.1. DeviceClass

Description: The *DeviceClass* Property indicates the device type.

Example: Temperature Control Device

4.2.2. Manufacturer

Value: MouldPro

4.2.3. Model

Description: The *Model* Property indicates the model of the Flosense device.

Example: Flosense 4.0

4.2.4. SerialNumber

Description: The *SerialNumber* Property indicates the serial number of the Flosense device displayed on the Product Information Screen.

Example: 36160001100001C8

4.2.5. SoftwareRevision

Description: The *SoftwareRevision* Property represents the Flosense software version displayed on the Product Information Screen.

Example: 5.0.0.309

Additional properties that are defined in 5:FlosenseDeviceType:

4.2.6. FirmwareVersion

Description: Flosense unit firmware version.

Example: 1.0.100.5

4.2.7. SensorInterfaceFirmwareVersion

Description: Flosense unit sensor interface firmware version

Example: V1.03

4.3. OperationType

The *4:OperationType* is defined in OPC 40082-1.

Table 11 – OperationType Definition

Attribute	Value				
BrowseName	OperationType				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 0:BaseObjectType defined in OPC UA Part 5					
0:HasProperty	Variable	4:DeviceMappingNumber	0:UInt32	0:PropertyType	M, RW
0:HasProperty	Variable	4:HighestActiveAlarmSeverity	0:UInt16	0:PropertyType	M, R
0:HasComponent	Variable	4:ActiveErrors	3:ActiveErrorData Type[]	0:BaseDataVariableType	M, R
0:HasComponent	Method	4:ResetAllErrors			O
0:HasComponent	Method	4:ResetErrorById			O
0:HasProperty	Variable	4:OperatingMode	4:OperatingMode Enumeration	0:PropertyType	M, RO
0:HasComponent	Variable	4:HoursOfOperation	0:Double	0:AnalogItem Type	O, RO
0:HasComponent	Method	4:IdentifyDevice			O
0:HasComponent	Method	4:SwitchOn			O
0:HasComponent	Method	4:SwitchOff			O
0:HasComponent	Method	4:ReduceToStandByOn			O
0:HasComponent	Method	4:ReduceToStandByOff			O

4.3.1. DeviceMappingNumber

Description: Unique identifier for devices of the same DeviceType within a local network. Default number is 1.

4.3.2. HighestActiveAlarmSeverity

Description: The overall alarm state of the Flosense unit. (0 = no active alarm, 500 = warning alarm, 1000 = full alarm)

4.3.3. ActiveErrors

Description: The list of active errors of the device.

4.3.4. OperatingMode

Description: The operating mode of the Flosense unit. Only the following values are used.

Table 12 – OperatingModeEnumeration Definition

Name	Value	Description
OTHER	0	Operating mode of the TCD is unknown
READY_TO_OPERATE	1	TCD is ready to operate (heating, pump and cooling are switched off)
NORMAL_OPERATION	2	TCD is running in normal operating mode

4.3.5. SwitchOn

Description: Not supported

4.3.6. SwitchOff

Description: Not supported

4.4. FR4ManifoldSettingType

The *5:FR4ManifoldSettingType* defines the Flosense 4.0 manifold components. The *Manifold_<mIndex>* object is instantiated under the global setting object *FR_<UnitSerialNumber>* with *0:HasComponent* as the reference type.

Figure 3 – FR4ManifoldSettingType Overview

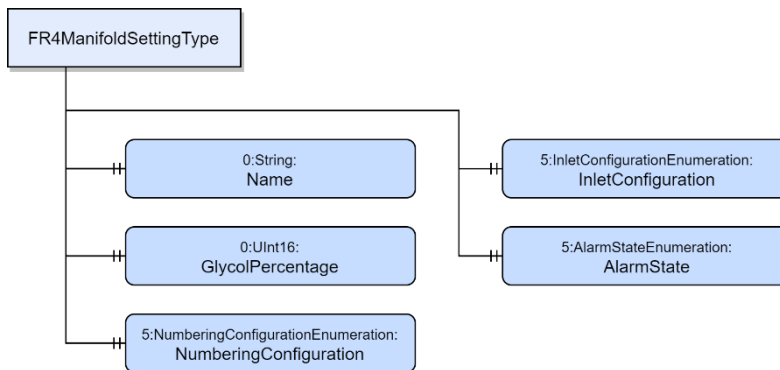


Table 13 - FR4ManifoldSettingType Definition

Attribute	Value				
BrowseName	FR4ManifoldSetting				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 0:BaseObjectType defined in OPC UA Part 5					
0:HasProperty	Variable	5:Name	0:String	0:PropertyType	M, RW
0:HasProperty	Variable	5:GlycolPercentage	0:UInt16	0:PropertyType	M, RW
0:HasProperty	Variable	5:NumberingConfiguration	5:NumberingConfigurationEnumeration	0:PropertyType	M, RW
0:HasProperty	Variable	5:InletConfiguration	5:InletConfigurationEnumeration	0:PropertyType	M, RW
0:HasProperty	Variable	5:AlarmState	5:AlarmStateEnumeration	0:PropertyType	M, RO

4.4.1. Name

Description: The name of the manifold.

Example: Manifold 1

4.4.2. GlycolPercentage

Description: The glycol percentage (%) of the manifold.

Example: 30

4.4.3. NumberingConfiguration

Description: The sensor display order of the manifold.

Table 14 - Values for NumberingConfigurationEnumeration

EnumValue	ValueAsText	Description
0	C	Forward Sensor Numbering
1	D	Reverse Sensor Numbering

4.4.4. InletConfiguration

Description: The inlet sensor choice of the manifold.

Table 15 - Values for InletConfigurationEnumeration

EnumValue	ValueAsText	Description
0	A	Sensor Inlet A is used
1	B	Sensor Inlet B is used

4.4.5. AlarmState

Description: Current alarm state of the manifold.

See [Table 4](#).

4.5. FR4SensorType

The *5:FR4SensorType* is abstract. It defines the general components of a Flosense sensor. *5:FR4FlowSensorType* and *5:FR4PressureSensorType* are subtypes of *5:FR4SensorType*. There will be no instances of a *5:FR4SensorType* itself, only of concrete subtypes.

Figure 4 – FR4SensorType Overview

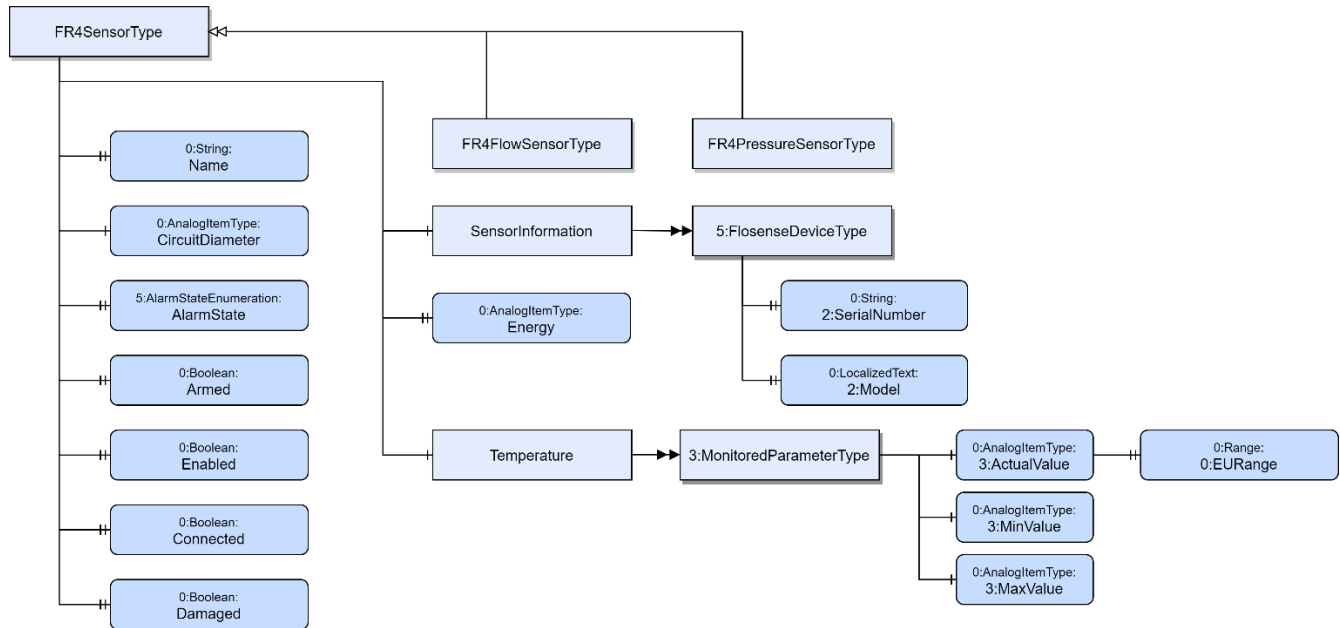


Table 16 – FR4SensorType Definition

Attribute	Value				
BrowseName	FR4SensorType				
IsAbstract	True				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 0:BaseObjectType defined in OPC UA Part 5					
0:HasComponent	Object	5:SensorInformation		5:FlosenseDeviceType	M
0:HasProperty	Variable	5:Name	0:String	0:PropertyType	M, RW
0:HasComponent	Variable	5:CircuitDiameter	0:Double	0:AnalogItem	O, RW
0:HasProperty	Variable	5:AlarmState	5:AlarmStateEnumeration	0:PropertyType	M, RO
0:HasProperty	Variable	5:Armed	0:Boolean	0:PropertyType	M, RO
0:HasProperty	Variable	5:Enabled	0:Boolean	0:PropertyType	M, RW
0:HasProperty	Variable	5:Connected	0:Boolean	0:PropertyType	M, RO
0:HasProperty	Variable	5:Damaged	0:Boolean	0:PropertyType	M, RO
0:HasComponent	Variable	5:Energy	0:Double	0:AnalogItem	O, RO
0:HasComponent	Object	5:Temperature		3:MonitoredParameterType	M
0:HasSubtype	ObjectType	5:FR4FlowSensorType			
0:HasSubtype	ObjectType	5:FR4PressureSensorType			

4.5.1. SensorInformation

4.5.1.1. SerialNumber

Description: The serial number of the sensor.

Example: 99711732-01-937-00106

4.5.1.2. Model

Description: The model number of the sensor.

Example: VFS 1-18

4.5.2. Name

Description: The name of the sensor.

Example: Sensor 1

4.5.3. CircuitDiameter

Description: The circuit diameter of the channel (mm or inch)

Example: 20

4.5.4. AlarmState

Description: Current alarm state of the sensor.

See [Table 4](#).

4.5.5. Armed

Description: The Arm/Disarm state of the sensor. Only Armed sensor can activate alarm.

Value: True/False

4.5.6. Enabled

Description: The Enabled/Disabled state of the sensor. When the sensor is disabled:

- 1) The sensor measures and logs as normal
- 2) Alarm is disabled
- 3) It is not included in the total flow rate calculation

Value: True/False

4.5.7. Connected

Description: The Connected/Disconnected state of the sensor.

Value: True/False

4.5.8. Damaged

Description: The Damaged/Not Damaged state of the sensor.

Value: True/False

4.5.9. Energy

Description: The energy dissipated in the cooling circuit (kWh for flow unit LPM or BTU for flow unit GPM)

Example: 100.0

4.5.10. Temperature

4.5.10.1. ActualValue

Description: Current temperature reading of the sensor (°C / °F)

Example: 30.0

4.5.10.1.1. EURange

Description: Rated minimum and maximum temperature of the sensor (°C / °F)

Example: Low = 0.0, High = 120.0

4.5.10.2. MinValue

Description: The high alarm threshold of the temperature (°C / °F)

Example: 0.0

4.5.10.3. MaxValue

Description: The low alarm threshold of the temperature (°C / °F)

Example: 120.0

4.6. FR4FlowSensorType

Object instances with BrowseName “Sensor_<Index>”, where “Index” represent the index of the sensor, shall be created under the manifold object instance Manifold_<Index> with 0:HasComponent as the reference type.

Figure 5 – FR4FlowSensorType Overview

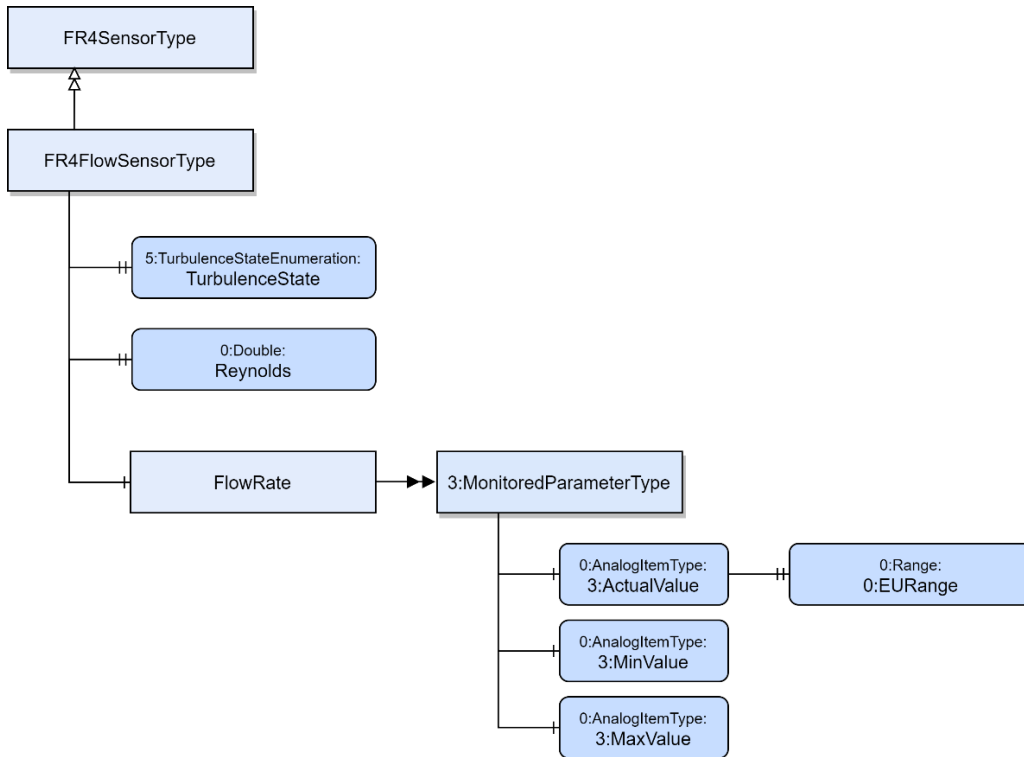


Table 17 – FR4FlowSensorType Definition

Attribute	Value				
BrowseName	FR4FlowSensorType				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 5:FR4SensorType					
0:HasProperty	Variable	5:TurbulenceState	5:TurbulenceStateEnumeration	0:PropertyType	O, RO
0:HasComponent	Variable	5:Reynolds	0:Double	0:BaseDataVariableType	O, RO
0:HasComponent	Object	5:FlowRate		3:MonitoredParameterType	M

Some of the properties are defined in 4.5 *FR4SensorType*.

4.6.1. TurbulenceState

Description: The turbulence state based on the calculated Reynolds number of the flow sensor.

Table 18 - Values for TurbulenceStateEnumeration

EnumValue	ValueAsText	Description
0	LAMINAR	Reynolds number (Re) < 4000
1	TRANSITIONAL	4000 ≤ Re < 6000
2	TURBULENT	Re ≥ 6000

4.6.2. Reynolds

Description: The *Reynolds* number helps predict the flow patterns.

Example: 3000.0

4.6.3. FlowRate

4.6.3.1. ActualValue

Description: Current flow reading of the sensor (LPM or GPM)

Example: 10.0

4.6.3.1.1. EURange

Description: Rated minimum and maximum flow of the sensor (LPM / GPM)

Example: Low = 1.0, High = 20.0

4.6.3.2. MinValue

Description: The high alarm threshold of the flow rate (LPM or GPM)

Example: 0.0

4.6.3.3. MaxValue

Description: The low alarm threshold of the flow rate (LPM or GPM)

Example: 20.0

4.7. FR4PressureSensorType

Object instances with BrowseName “<name>”, where “name” represents the name of the sensor, shall be created under the manifold object instance Manifold_<mIndex> with 0:HasComponent as the reference type.

Figure 6 – FR4PressureSensorType Overview

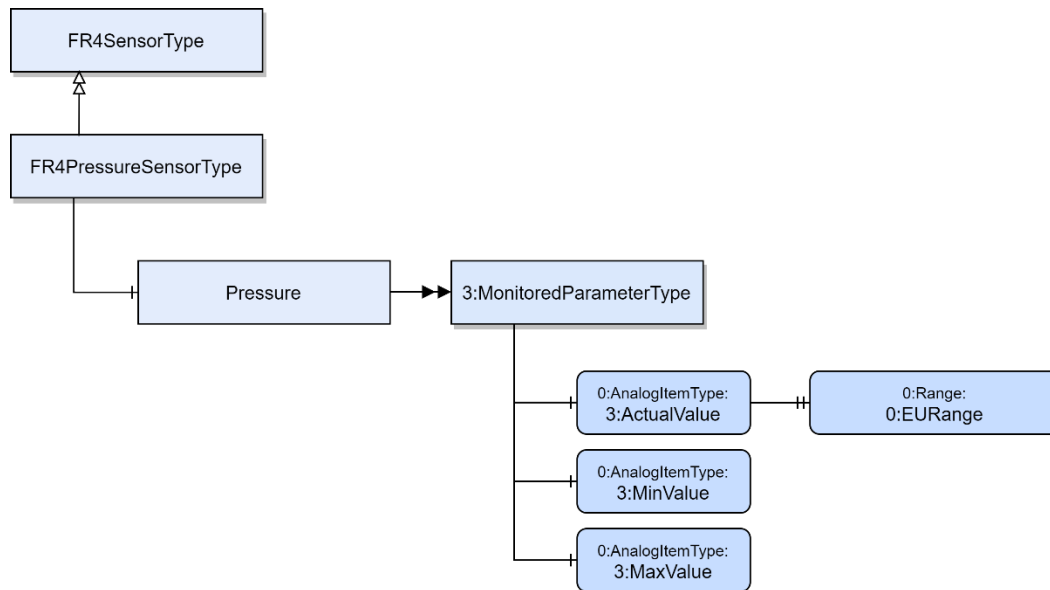


Table 19 – FR4PressureSensorType Definition

Attribute	Value				
BrowseName	FR4PressureSensorType				
IsAbstract	False				
References	Node Class	BrowseName	Data Type	Type Definition	Other
Subtype of 5:FR4SensorType					
0:HasComponent	Object	5:Pressure		3:MonitoredParameterType	M

Some of the properties are defined in 4.5 *FR4SensorType*.

4.7.1. Pressure

4.7.1.1. ActualValue

Description: Current pressure reading of the sensor (bar or psi)

Example: 5.0

4.7.1.1.1. EURange

Description: Rated minimum and maximum pressure of the sensor (bar or psi)

Example: Low = 1.0, High = 10.0

4.7.1.2. MinValue

Description: The high alarm threshold of the pressure (bar or psi)

Example: 1.0

4.7.1.3. MaxValue

Description: The low alarm threshold of the pressure (bar or psi)

Example: 10.0

5. NodeID Tables

Table 20 - NodeID of Global Setting Properties

Namespace Index	Identifier	Identifier Type	Variable Name	Unit
5	1001	Numeric	SerialNumber	
5	1002	Numeric	Model	
5	1003	Numeric	FirmwareVersion	
5	1004	Numeric	SoftwareRevision	
5	1005	Numeric	SensorInterfaceFirmwareVersion	
5	1006	Numeric	Manufacturer	
5	1008	Numeric	DeviceMappingNumber	
5	1009	Numeric	OperatingMode	
5	1011	Numeric	ConfigurationName	
5	1012	Numeric	DiameterUnit	
5	1013	Numeric	FlowUnit	
5	1014	Numeric	TemperatureUnit	
5	1015	Numeric	PressureUnit	
5	1016	Numeric	LoggingRate	sec
5	1020	Numeric	AlarmState	
5	1021	Numeric	AlarmsMuted	
5	1022	Numeric	HighestActiveAlarmSeverity	
5	1023	Numeric	ActiveErrors	

Table 21 - NodeID of Manifold Properties

Namespace Index	Identifier	Identifier Type	Variable Name	Unit
5	[mIndex]0010	Numeric	Name	
5	[mIndex]0011	Numeric	GlycolPercentage	Percent%
5	[mIndex]0012	Numeric	NumberingConfiguration	
5	[mIndex]0013	Numeric	InletConfiguration	
5	[mIndex]0020	Numeric	AlarmState	

Identifier: *mIndex* represents the 1 to 2 digit(s) manifold index without leading zero-padding. For the first manifold – Manifold1, the identifier of Name would be 10010.

Table 22 - NodeID of Flow Sensor Properties

Namespace Index	Identifier	Identifier Type	Variable Name (Meaning in Flosense)	Unit
5	[mIndex][sIndex]01	Numeric	SerialNumber	
5	[mIndex][sIndex]02	Numeric	Model	
5	[mIndex][sIndex]10	Numeric	Name	
5	[mIndex][sIndex]11	Numeric	Armed	
5	[mIndex][sIndex]12	Numeric	Enabled	
5	[mIndex][sIndex]13	Numeric	Connected	
5	[mIndex][sIndex]14	Numeric	Damaged	
5	[mIndex][sIndex]15	Numeric	TurbulenceState	
5	[mIndex][sIndex]16	Numeric	Reynolds	
5	[mIndex][sIndex]17	Numeric	Energy	kWh / BTU
5	[mIndex][sIndex]87	Numeric	EngineeringUnits (Energy Unit)	
5	[mIndex][sIndex]18	Numeric	CircuitDiameter	mm / inch
5	[mIndex][sIndex]88	Numeric	EngineeringUnits (Circuit Diameter Unit)	
5	[mIndex][sIndex]20	Numeric	AlarmState	
FlowRate				
5	[mIndex][sIndex]30	Numeric	ActualValue (Flow)	LPM / GPM
5	[mIndex][sIndex]31	Numeric	EURange (Flow Range)	LPM / GPM
5	[mIndex][sIndex]32	Numeric	MinValue (Flow Low Alarm Threshold)	LPM / GPM
5	[mIndex][sIndex]33	Numeric	MaxValue (Flow High Alarm Threshold)	LPM / GPM
5	[mIndex][sIndex]35	Numeric	EngineeringUnits (Flow Unit)	
5	[mIndex][sIndex]37	Numeric	EngineeringUnits (Flow Low Alarm Threshold Unit)	
5	[mIndex][sIndex]38	Numeric	EngineeringUnits (Flow High Alarm Threshold Unit)	
Temperature				
5	[mIndex][sIndex]40	Numeric	ActualValue (Temperature)	°C / °F
5	[mIndex][sIndex]41	Numeric	EURange (Temperature Range)	°C / °F
5	[mIndex][sIndex]42	Numeric	MinValue (Temperature Low Alarm Threshold)	°C / °F
5	[mIndex][sIndex]43	Numeric	MaxValue (Temperature High Alarm Threshold)	°C / °F
5	[mIndex][sIndex]45	Numeric	EngineeringUnits (Temperature Unit)	
5	[mIndex][sIndex]47	Numeric	EngineeringUnits (Temperature Low Alarm Threshold Unit)	
5	[mIndex][sIndex]48	Numeric	EngineeringUnits (Temperature High Alarm Threshold Unit)	

Identifier: *mIndex* represents the 1 to 2 digit(s) manifold index without leading zero-padding and *sIndex* represents 2-digit sensor index [01-12] with leading zero-padding. For the first flow sensor in the first manifold – Manifold1 Sensor1, the identifier of Name would be 10110.

Table 23 - NodeID of Pressure Sensor Properties

Namespace Index	Identifier	Identifier Type	Variable Name (Meaning in Flosense)	Unit
5	[mIndex][sIndex]01	Numeric	SerialNumber	
5	[mIndex][sIndex]02	Numeric	Model	
5	[mIndex][sIndex]10	Numeric	Name	
5	[mIndex][sIndex]11	Numeric	Armed	
5	[mIndex][sIndex]12	Numeric	Enabled	
5	[mIndex][sIndex]13	Numeric	Connected	
5	[mIndex][sIndex]14	Numeric	Damaged	
5	[mIndex][sIndex]17	Numeric	Energy	kWh / BTU
5	[mIndex][sIndex]87	Numeric	EngineeringUnits (Energy Unit)	
5	[mIndex][sIndex]18	Numeric	CircuitDiameter	mm
5	[mIndex][sIndex]88	Numeric	EngineeringUnits (Circuit Diameter Unit)	
5	[mIndex][sIndex]20	Numeric	AlarmState	
Temperature				
5	[mIndex][sIndex]40	Numeric	ActualValue (Temperature)	°C / °F
5	[mIndex][sIndex]41	Numeric	TemperatureRange	°C / °F
5	[mIndex][sIndex]42	Numeric	MinValue (Temperature Low Alarm Threshold)	°C / °F
5	[mIndex][sIndex]43	Numeric	MaxValue (Temperature High Alarm Threshold)	°C / °F
5	[mIndex][sIndex]45	Numeric	EngineeringUnits (Temperature Unit)	
5	[mIndex][sIndex]47	Numeric	EngineeringUnits (Temperature Low Alarm Threshold Unit)	
5	[mIndex][sIndex]48	Numeric	EngineeringUnits (Temperature High Alarm Threshold Unit)	
Pressure				
5	[mIndex][sIndex]50	Numeric	ActualValue (Pressure)	bar / psi
5	[mIndex][sIndex]51	Numeric	PressureRange	bar / psi
5	[mIndex][sIndex]52	Numeric	MinValue (Pressure Low Alarm Threshold)	bar / psi
5	[mIndex][sIndex]53	Numeric	MaxValue (Pressure High Alarm Threshold)	bar / psi
5	[mIndex][sIndex]55	Numeric	EngineeringUnits (Pressure Unit)	
5	[mIndex][sIndex]57	Numeric	EngineeringUnits (Pressure Low Alarm Threshold Unit)	
5	[mIndex][sIndex]58	Numeric	EngineeringUnits (Pressure High Alarm Threshold Unit)	

Identifier: *mIndex* represents the 1 to 2 digit(s) manifold index without leading zero-padding and *sIndex* represents 2-digit sensor index [13-15] (13 – Active Inlet, 14 – Outlet, 15 – Inactive Inlet). For the first pressure sensor in the first manifold – Manifold1 Sensor13, the identifier of Name would be 11310.