PSIG Pipeline Simulation Interest Group

XPSL: Configuration Objects: Recommendation Document

PSIG 001/2004

Objective: Define a simulation configuration format and terminology recommendation that can be used to transfer input data among various software tools.

Contents

XPSL: Configuration Objects: Recommendation Document

1 Goal

The XPSL: Configuration Objects: Recommendation Document was developed after reviewing various methods used by a number of simulation software vendors to describe pipeline facilities. In addition, the information that is typically available from the pipeline companies was also reviewed. This data was organized as much as possible according to the underlying structure of a simulation. As with all PSIG Standards documents, this is a work in progress and therefore does not include all possible simulation configuration data items. Missing items will be added as they are identified.

2 References

XPSL (Extensible Pipeline Simulation Language) Plan: PSIG 001/2002

Common Language Standard: PSIG 001/2000

3 XML Definitions

Element

An XML structural construct. An XML element consists of a start tag, an end tag, and the information between the tags, which is often referred to as the contents. Each element has a type, identified by name, sometimes called its "generic identifier" (GI), and may have a set of attribute specifications. Each attribute specification has a name and a value. An instance of an element is declared using <element> tags. Elements used in an XML file are described by a **DTD** or **schema**, either of which can provide a description of the structure of the data.

Complex Type

An element that can contain other elements or attributes. Appears as <complexType> in XML documents.

Simple Type

An element that contain only text (alphanumeric). Appears as <simpleType> in XML documents. Attributes are considered simple types because they contain only text.

Property

A specific aspect, characteristic, attribute, or relation which may be used to describe an object. It has a specific meaning, and may have a range of permitted values, and a domain of classes of objects which it may describe.

Attribute

An XML structural construct. A name-value pair, separated by an equals sign, included inside a tagged element that modifies certain features of the element. All attribute values, including things like size and width, are in fact text strings and not numbers. For XML, all values must be enclosed in quotation marks. You can declare attributes for an XML element type using an **attribute list declaration.**

4 Philosophy

The governing philosophy used for the development of this recommendation is to develop a schema that:

- represents the physical characteristics of hydraulically significant pipeline facilities
- is consistent
- allows for reuse of defined terms

As a result, a pipeline can be considered to be:

- a collection of pipes, equipment and exchange points connected together by “welds” referred to as nodes.

The majority of the simulation software vendors, who have contributed so far, use nodes as a "glue" to represent connectivity between different pieces of equipment and/or pipes. This convention has been embodied in the XPSL schema. Pipes are considered as separate items from the other equipment primarily due to their characteristic of having many properties that may be described as a profile along their length.

5 Conventions

Pipeline facilities covered by this Recommendation are divided into elements. For every element the following properties have been established:

- Settings
- Setpoints
- Controls
- Limits

The Settings property contains all of the physical characteristic attributes of the item such as the valve coefficient attribute for a valve element or pipe diameter for a pipe element. The Setpoints property contains the attributes that could conceivably be changed both in the real world and in the simulation, while the Controls property contains a listing of which Setpoints attribute changes are to occur during the simulation. The Limits property contains the physical limit attributes for the operation of the Elements, such as the rated horsepower attribute for a compressor element or MAOP attribute for a pipe element. Attributes have name and type fields, where the type indicates the unit type. For instance, a pipe MAOP would have the type "pressure".

6 Schema

Schema **xpsl.xsd**

schema location: D:\Usr\JobFiles\XPSL\xpsl.xsd

targetNamespace: **http://tempuri.org/xpsl.xsd**

Elements	Complex types	Simple types	Attr. groups
Configuration	BlockValve	Bulk_Modulus	EndDevice
	CheckValve	Comp_Control	InlineDevice
	Compressor	CompressorTypes	
	CompressorInfo	Density	
	Coordinate	Diameter	
	External	Efficiency	
	Flow	Elevation	
	Node	Fraction	
	Pipe	Fuel_Ratio	
	PipeInfo	Gravity	
	Pressure	Head	
	Profile	Heat_Capacity	
	Regulator	Heat_Transfer_Coefficient	
	Roughness	Heat_Value	
	SetPointsType	Inertia	
	Temperature	Length	
	ThermalLayer	Percent	
	ValveInfo	Power	
		ppm	

Ratio

RegMode

Space_Volume

Speed

Status

Tensile_Strength

Thermal_Conductivity

Time

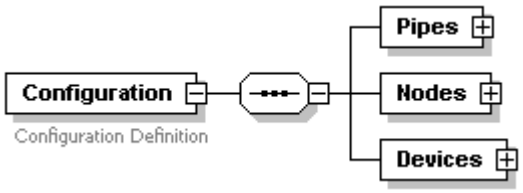
Torque

Valve_Coefficient

Velocity

YesNo

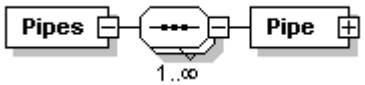
element **Configuration**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Pipes** **Nodes** **Devices**
attributes	Name: Name; Type: xs:string; Use: required; Default: ; Fixed: ; Annotation:
annotation	documentation: Configuration Definition
source	<xs:element name="Configuration"> <xs:annotation>

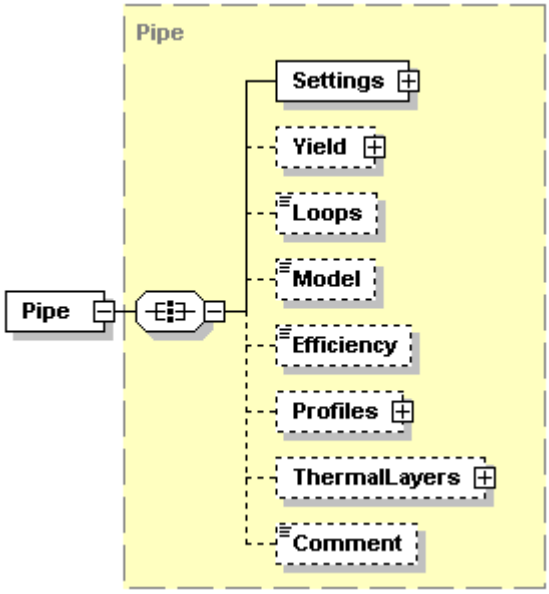
```
  <xs:documentation>Configuration Definition</xs:documentation>
 </xs:annotation>
 <xs:complexType>
  <xs:sequence>
   <xs:element name="Pipes">
    <xs:complexType>
     <xs:sequence maxOccurs="unbounded">
      <xs:element name="Pipe" type="xpsl:Pipe"/>
     </xs:sequence>
    </xs:complexType>
   </xs:element>
   <xs:element name="Nodes">
    <xs:complexType>
     <xs:sequence>
      <xs:element name="Node" type="xpsl:Node" minOccurs="2" maxOccurs="unbounded"/>
     </xs:sequence>
    </xs:complexType>
   </xs:element>
   <xs:element name="Devices">
    <xs:complexType>
     <xs:sequence>
      <xs:element name="BlockValve" type="xpsl:BlockValve" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="CheckValve" type="xpsl:CheckValve" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="Compressor" type="xpsl:Compressor" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="External" type="xpsl:External" minOccurs="2" maxOccurs="unbounded"/>
      <xs:element name="Regulator" type="xpsl:Regulator" minOccurs="0" maxOccurs="unbounded"/>
     </xs:sequence>
```

```
      </xs:complexType>
    </xs:element>
   </xs:sequence>
   <xs:attribute name="Name" type="xs:string" use="required"/>
  </xs:complexType>
</xs:element>
```

element **Configuration/Pipes**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Pipe**
source	<xs:element name="Pipes"> <xs:complexType> <xs:sequence maxOccurs="unbounded"> <xs:element name="Pipe" type="xpsl:Pipe"/> </xs:sequence> </xs:complexType> </xs:element>

element **Configuration/Pipes/Pipe**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pipe**
children	**Settings** **Yield** **Loops** **Model** **Efficiency** **Profiles** **ThermalLayers** **Comment**

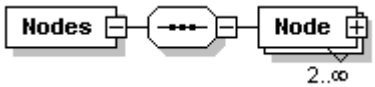
attributes

Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
FromNode	xs:string	required			
ToNode	xs:string	required			

source

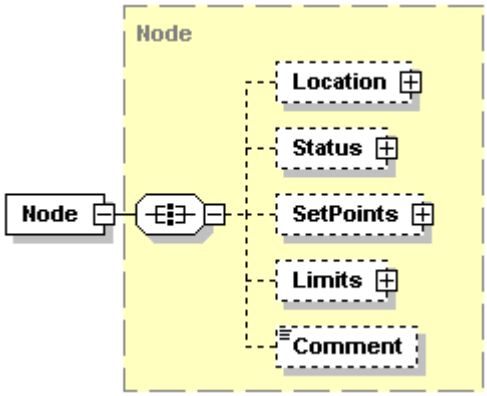
```
<xs:element name="Pipe" type="xpsl:Pipe"/>
```

element **Configuration/Nodes**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Node**

source	<xs:element name="Nodes"> <xs:complexType> <xs:sequence> <xs:element name="Node" type="xpsl:Node" minOccurs="2" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType> </xs:element>

element **Configuration/Nodes/Node**

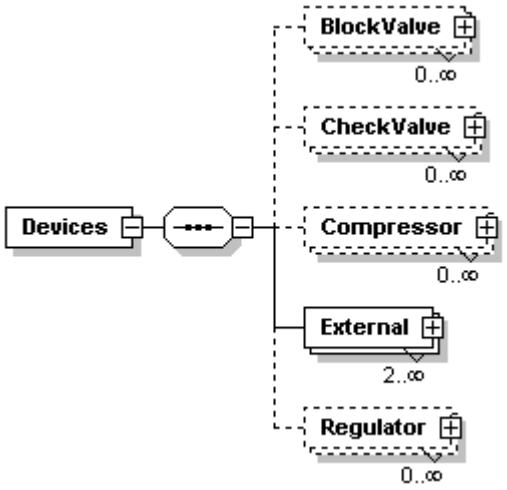
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Node**
children	**Location** **Status** **SetPoints** **Limits** **Comment**

attributes

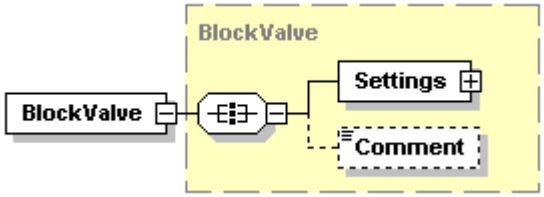
Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
Elevation	Elevation	required			

source	<xs:element name="Node" type="xpsl:Node" minOccurs="2" maxOccurs="unbounded"/>

element **Configuration/Devices**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**BlockValve CheckValve Compressor External Regulator**
source	<xs:element name="Devices"> <xs:complexType> <xs:sequence> <xs:element name="BlockValve" type="xpsl:BlockValve" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="CheckValve" type="xpsl:CheckValve" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="Compressor" type="xpsl:Compressor" minOccurs="0" maxOccurs="unbounded"/> <xs:element name="External" type="xpsl:External" minOccurs="2" maxOccurs="unbounded"/> <xs:element name="Regulator" type="xpsl:Regulator" minOccurs="0" maxOccurs="unbounded"/> </xs:sequence> </xs:complexType> </xs:element>

element **Configuration/Devices/BlockValve**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**BlockValve**
children	**Settings** **Comment**

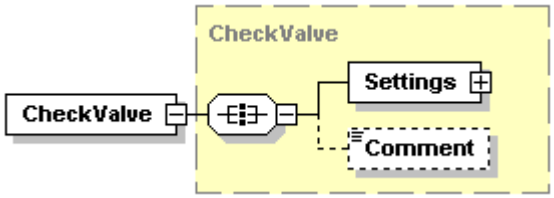
attributes

Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
FromNode	xs:string	required			
ToNode	xs:string	required			

source

```
<xs:element name="BlockValve" type="xpsl:BlockValve" minOccurs="0" maxOccurs="unbounded"/>
```


element **Configuration/Devices/CheckValve**

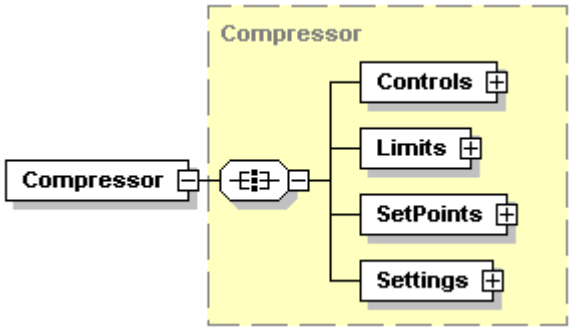
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**CheckValve**
children	**Settings** **Comment**

attributes

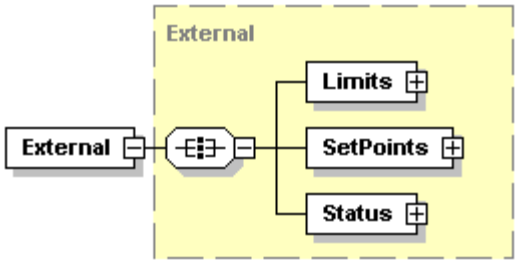
Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
FromNode	xs:string	required			
ToNode	xs:string	required			

source	<xs:element name="CheckValve" type="xpsl:CheckValve" minOccurs="0" maxOccurs="unbounded"/>

element **Configuration/Devices/Compressor**

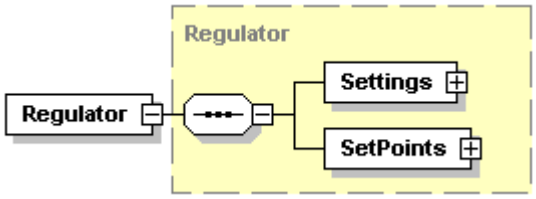
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Compressor**
children	**Controls** **Limits** **SetPoints** **Settings**
attributes	Name / Type / Use / Default / Fixed / Annotation Type — CompressorTypes — required Name — xs:string — required FromNode — xs:string — required ToNode — xs:string — required
source	<xs:element name="Compressor" type="xpsl:Compressor" minOccurs="0" maxOccurs="unbounded"/>

element **Configuration/Devices/External**

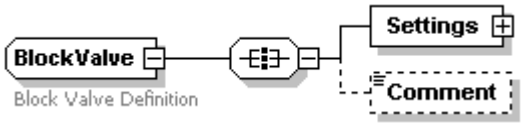
diagram	
namespace	http://tempuri.org/xpsl.xsd

type	**External**
children	**Limits** **SetPoints** **Status**
attributes	Name / Type / Use / Default / Fixed / Annotation Name / xs:string / required Node / xs:string / required
source	<xs:element name="External" type="xpsl:External" minOccurs="2" maxOccurs="unbounded"/>

element **Configuration/Devices/Regulator**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Regulator**
children	**Settings** **SetPoints**
attributes	Name / Type / Use / Default / Fixed / Annotation Name / xs:string / required FromNode / xs:string / required ToNode / xs:string / required
source	<xs:element name="Regulator" type="xpsl:Regulator" minOccurs="0" maxOccurs="unbounded"/>

complexType **BlockValve**

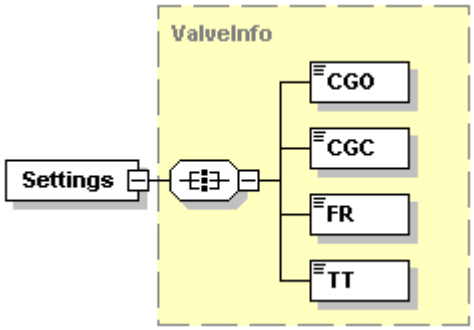
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Settings** **Comment**
used by	element **Configuration/Devices/BlockValve**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Name	xs:string	required			
	FromNode	xs:string	required			
	ToNode	xs:string	required			
annotation	documentation	Block Valve Definition				

source

```
<xs:complexType name="BlockValve">
 <xs:annotation>
  <xs:documentation>Block Valve Definition</xs:documentation>
 </xs:annotation>
 <xs:all>
  <xs:element name="Settings" type="ValveInfo"/>
  <xs:element name="Comment" type="xs:string" minOccurs="0"/>
 </xs:all>
 <xs:attributeGroup ref="InlineDevice"/>
</xs:complexType>
```

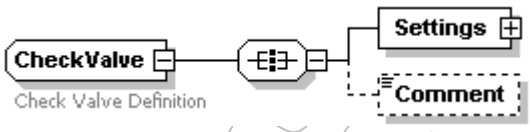

element **BlockValve/Settings**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**ValveInfo**
children	**CGO CGC FR TT**
source	<xs:element name="Settings" type="ValveInfo"/>

element **BlockValve/Comment**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:string**
source	<xs:element name="Comment" type="xs:string" minOccurs="0"/>

complexType **CheckValve**

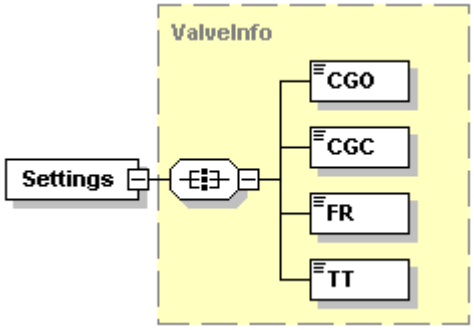
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Settings** **Comment**
used by	element **Configuration/Devices/CheckValve**
attributes	Name / Type / Use / Default / Fixed / Annotation Name — xs:string — required FromNode — xs:string — required ToNode — xs:string — required
annotation	documentation: Check Valve Definition
source	<xs:complexType name="CheckValve"> <xs:annotation> <xs:documentation>Check Valve Definition</xs:documentation> </xs:annotation> <xs:all> <xs:element name="Settings" type="ValveInfo"/> <xs:element name="Comment" type="xs:string" minOccurs="0"/>

```
  </xs:all>

  <xs:attributeGroup ref="InlineDevice"/>

</xs:complexType>
```

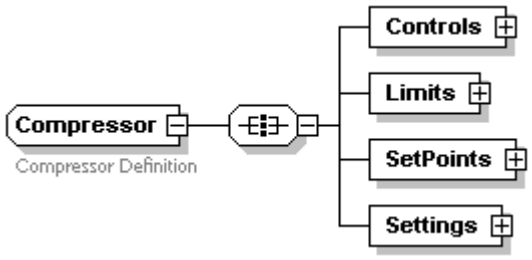
element **CheckValve/Settings**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**ValveInfo**
children	**CGO CGC FR TT**
source	<xs:element name="Settings" type="ValveInfo"/>

element **CheckValve/Comment**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:string**
source	<xs:element name="Comment" type="xs:string" minOccurs="0"/>

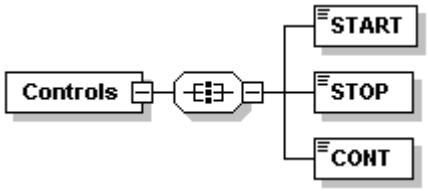
complexType **Compressor**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Controls** **Limits** **SetPoints** **Settings**
used by	element **Configuration/Devices/Compressor**
attributes	Name / Type / Use / Default / Fixed / Annotation Type — CompressorTypes — required Name — xs:string — required FromNode — xs:string — required ToNode — xs:string — required
annotation	documentation: Compressor Definition
source	<xs:complexType name="Compressor"> <xs:annotation> <xs:documentation>Compressor Definition</xs:documentation> </xs:annotation> <xs:all> <xs:element name="Controls"> <xs:complexType> <xs:all> <xs:element name="START" type="Time"/> <xs:element name="STOP" type="Time"/>

```
      <xs:element name="CONT" type="Comp_Control"/>
    </xs:all>
  </xs:complexType>
 </xs:element>
 <xs:element name="Limits">
  <xs:complexType>
   <xs:all>
    <xs:element name="MXPW" type="Power"/>
    <xs:element name="QMAX" type="Flow"/>
    <xs:element name="QMIN" type="Flow"/>
    <xs:element name="RMAX" type="Ratio"/>
    <xs:element name="RMIN" type="Ratio"/>
   </xs:all>
  </xs:complexType>
 </xs:element>
 <xs:element name="SetPoints">
  <xs:complexType>
   <xs:all>
    <xs:element name="SPPD" type="Pressure"/>
    <xs:element name="SPPS" type="Pressure"/>
    <xs:element name="SPPW" type="Power"/>
   </xs:all>
  </xs:complexType>
 </xs:element>
 <xs:element name="Settings" type="xpsl:CompressorInfo"/>
</xs:all>
<xs:attribute name="Type" type="CompressorTypes" use="required"/>
```

	<xs:attributeGroup ref="InlineDevice"/> </xs:complexType>

element **Compressor/Controls**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**START STOP CONT**
source	<xs:element name="Controls"> <xs:complexType> <xs:all> <xs:element name="START" type="Time"/> <xs:element name="STOP" type="Time"/> <xs:element name="CONT" type="Comp_Control"/> </xs:all> </xs:complexType> </xs:element>

element **Compressor/Controls/START**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Time**
source	<xs:element name="START" type="Time"/>

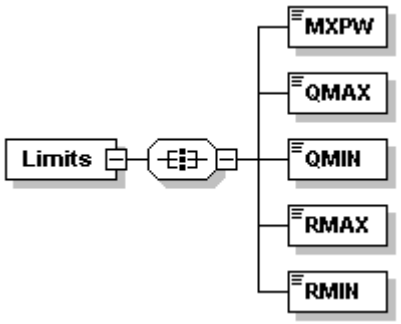
element **Compressor/Controls/STOP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Time**
source	<xs:element name="STOP" type="Time"/>

element **Compressor/Controls/CONT**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Comp_Control**
facets	enumeration Suction enumeration Discharge enumeration Power
source	<xs:element name="CONT" type="Comp_Control"/>

element **Compressor/Limits**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**MXPW QMAX QMIN RMAX RMIN**

source	<xs:element name="Limits"> <xs:complexType> <xs:all> <xs:element name="MXPW" type="Power"/> <xs:element name="QMAX" type="Flow"/> <xs:element name="QMIN" type="Flow"/> <xs:element name="RMAX" type="Ratio"/> <xs:element name="RMIN" type="Ratio"/> </xs:all> </xs:complexType> </xs:element>

element **Compressor/Limits/MXPW**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Power**
facets	minInclusive 0
source	<xs:element name="MXPW" type="Power"/>

element **Compressor/Limits/QMAX**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Flow**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="QMAX" type="Flow"/>

element **Compressor/Limits/QMIN**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Flow**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="QMIN" type="Flow"/>

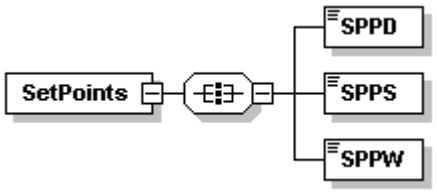
element **Compressor/Limits/RMAX**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Ratio**
facets	minExclusive 0
source	<xs:element name="RMAX" type="Ratio"/>

element **Compressor/Limits/RMIN**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Ratio**
facets	minExclusive 0
source	<xs:element name="RMIN" type="Ratio"/>

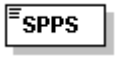
element **Compressor/SetPoints**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**SPPD SPPS SPPW**
source	<xs:element name="SetPoints"> <xs:complexType> <xs:all> <xs:element name="SPPD" type="Pressure"/> <xs:element name="SPPS" type="Pressure"/> <xs:element name="SPPW" type="Power"/> </xs:all> </xs:complexType> </xs:element>

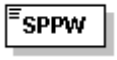
element **Compressor/SetPoints/SPPD**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="SPPD" type="Pressure"/>

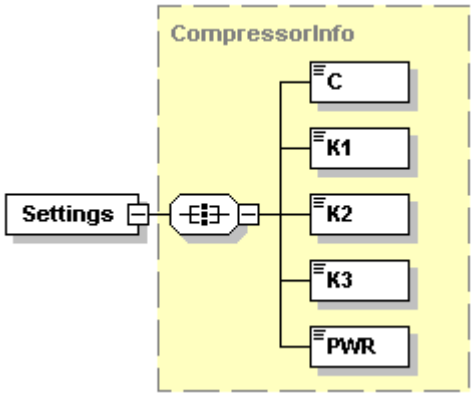
element **Compressor/SetPoints/SPPS**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type — Type: xs:string — Use: optional — Default: Global — Fixed: — Annotation:
source	<xs:element name="SPPS" type="Pressure"/>

element **Compressor/SetPoints/SPPW**

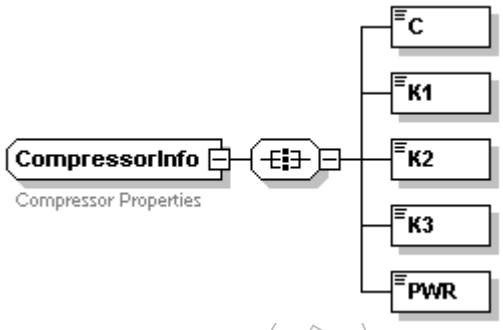
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Power**
facets	minInclusive 0
source	<xs:element name="SPPW" type="Power"/>

element **Compressor/Settings**

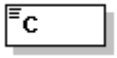
diagram	
namespace	http://tempuri.org/xpsl.xsd

type	**CompressorInfo**
children	**C K1 K2 K3 PWR**
source	<xs:element name="Settings" type="xpsl:CompressorInfo"/>

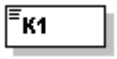
complexType **CompressorInfo**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**C K1 K2 K3 PWR**
used by	element **Compressor/Settings**
annotation	documentation Compressor Properties
source	<xs:complexType name="CompressorInfo"> <xs:annotation> <xs:documentation>Compressor Properties</xs:documentation> </xs:annotation> <xs:all> <xs:element name="C" type="Valve_Coefficient"/> <xs:element name="K1" type="xs:float"/> <xs:element name="K2" type="xs:float"/> <xs:element name="K3" type="xs:float"/> <xs:element name="PWR" type="Power"/> </xs:all> </xs:complexType>

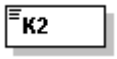
element **CompressorInfo/C**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Valve_Coefficient**
facets	minExclusive 0
source	<xs:element name="C" type="Valve_Coefficient"/>

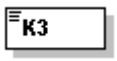
element **CompressorInfo/K1**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="K1" type="xs:float"/>

element **CompressorInfo/K2**

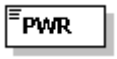
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="K2" type="xs:float"/>

element **CompressorInfo/K3**

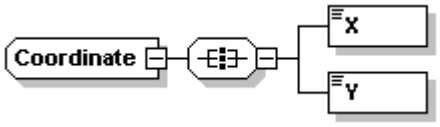
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**

source	<xs:element name="K3" type="xs:float"/>

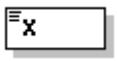
element **CompressorInfo/PWR**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Power**
facets	minInclusive 0
source	<xs:element name="PWR" type="Power"/>

complexType **Coordinate**

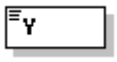
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**X Y**
used by	element **Node/Location**
source	<xs:complexType name="Coordinate"> <xs:all> <xs:element name="X" type="xs:long"/> <xs:element name="Y" type="xs:long"/> </xs:all> </xs:complexType>

element **Coordinate/X**

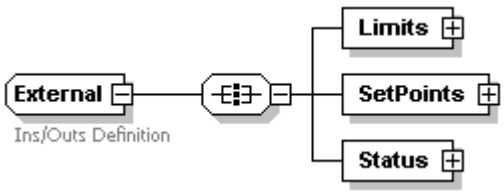
diagram	

namespace	http://tempuri.org/xpsl.xsd
type	**xs:long**
source	<xs:element name="X" type="xs:long"/>

element **Coordinate/Y**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:long**
source	<xs:element name="Y" type="xs:long"/>

complexType **External**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Limits** **SetPoints** **Status**
used by	element **Configuration/Devices/External**

attributes

Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
Node	xs:string	required			

annotation: documentation — Ins/Outs Definition

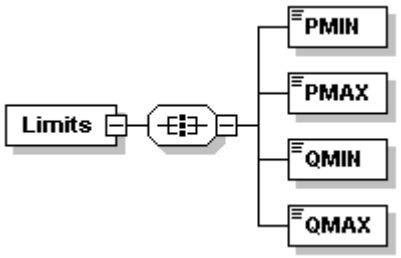
source

```
<xs:complexType name="External">
 <xs:annotation>
  <xs:documentation>Ins/Outs Definition</xs:documentation>
 </xs:annotation>
```

```
<xs:all>
 <xs:element name="Limits">
  <xs:complexType>
   <xs:all>
    <xs:element name="PMIN" type="xs:float"/>
    <xs:element name="PMAX" type="xs:float"/>
    <xs:element name="QMIN" type="xs:float"/>
    <xs:element name="QMAX" type="xs:float"/>
   </xs:all>
  </xs:complexType>
 </xs:element>
 <xs:element name="SetPoints">
  <xs:complexType>
   <xs:all>
    <xs:element name="SQ" type="xs:float"/>
    <xs:element name="SP" type="xs:float"/>
    <xs:element name="SH" type="xs:float"/>
    <xs:element name="SSG" type="Gravity"/>
    <xs:element name="SHHV" type="xs:float"/>
    <xs:element name="SCO2" type="xs:float"/>
    <xs:element name="SNQ" type="xs:float"/>
    <xs:element name="SNH" type="xs:float"/>
   </xs:all>
  </xs:complexType>
 </xs:element>
 <xs:element name="Status">
  <xs:complexType>
```

```
      <xs:all>
        <xs:element name="Pressure" type="Status"/>
        <xs:element name="Flow" type="Status"/>
        <xs:element name="Temp" type="xs:float"/>
      </xs:all>
    </xs:complexType>
  </xs:element>
 </xs:all>
 <xs:attributeGroup ref="EndDevice"/>
</xs:complexType>
```

element **External/Limits**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**PMIN PMAX QMIN QMAX**

source

```
<xs:element name="Limits">
 <xs:complexType>
  <xs:all>
   <xs:element name="PMIN" type="xs:float"/>
   <xs:element name="PMAX" type="xs:float"/>
   <xs:element name="QMIN" type="xs:float"/>
   <xs:element name="QMAX" type="xs:float"/>
  </xs:all>
```

	</xs:complexType> </xs:element>

element **External/Limits/PMIN**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="PMIN" type="xs:float"/>

element **External/Limits/PMAX**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="PMAX" type="xs:float"/>

element **External/Limits/QMIN**

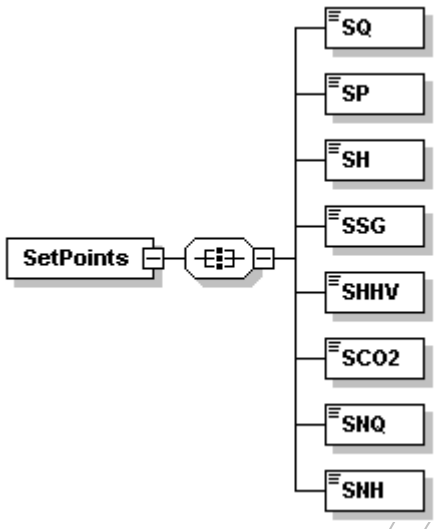
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="QMIN" type="xs:float"/>

element **External/Limits/QMAX**

diagram	
namespace	http://tempuri.org/xpsl.xsd

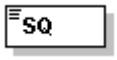
type	**xs:float**
source	<xs:element name="QMAX" type="xs:float"/>

element **External/SetPoints**

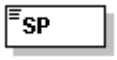
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**SQ SP SH SSG SHHV SCO2 SNQ SNH**
source	<xs:element name="SetPoints"> <xs:complexType> <xs:all> <xs:element name="SQ" type="xs:float"/> <xs:element name="SP" type="xs:float"/> <xs:element name="SH" type="xs:float"/> <xs:element name="SSG" type="Gravity"/> <xs:element name="SHHV" type="xs:float"/> <xs:element name="SCO2" type="xs:float"/> <xs:element name="SNQ" type="xs:float"/> <xs:element name="SNH" type="xs:float"/> </xs:all>

	</xs:complexType> </xs:element>

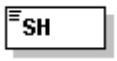
element **External/SetPoints/SQ**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SQ" type="xs:float"/>

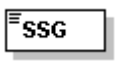
element **External/SetPoints/SP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SP" type="xs:float"/>

element **External/SetPoints/SH**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SH" type="xs:float"/>

element **External/SetPoints/SSG**

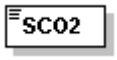
diagram	
namespace	http://tempuri.org/xpsl.xsd

type	**Gravity**
facets	minExclusive 0
source	<xs:element name="SSG" type="Gravity"/>

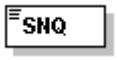
element **External/SetPoints/SHHV**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SHHV" type="xs:float"/>

element **External/SetPoints/SCO2**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SCO2" type="xs:float"/>

element **External/SetPoints/SNQ**

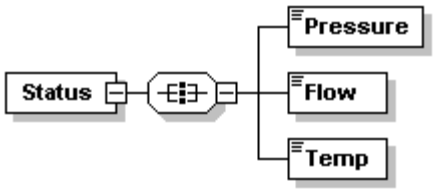
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SNQ" type="xs:float"/>

element **External/SetPoints/SNH**

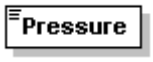
diagram	

namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SNH" type="xs:float"/>

element **External/Status**

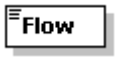
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Pressure** **Flow** **Temp**
source	<xs:element name="Status"> <xs:complexType> <xs:all> <xs:element name="Pressure" type="Status"/> <xs:element name="Flow" type="Status"/> <xs:element name="Temp" type="xs:float"/> </xs:all> </xs:complexType> </xs:element>

element **External/Status/Pressure**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Status**
facets	enumeration Known enumeration Unknown

source	<xs:element name="Pressure" type="Status"/>

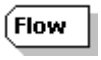
element **External/Status/Flow**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Status**
facets	enumeration Known enumeration Unknown
source	<xs:element name="Flow" type="Status"/>

element **External/Status/Temp**

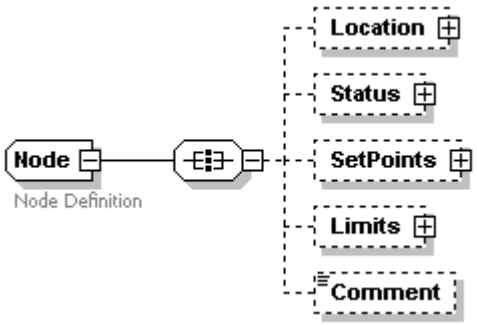
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="Temp" type="xs:float"/>

complexType **Flow**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	extension of **xs:float**
used by	elements **SetPointsType/Flow** **Node/Status/Flow** **Compressor/Limits/QMAX** **Compressor/Limits/QMIN** **Regulator/SetPoints/SQ**
attributes	Name: Type — Type: xs:string — Use: optional — Default: Global — Fixed: — Annotation:
source	<xs:complexType name="Flow">

```
<xs:simpleContent>
 <xs:extension base="xs:float">
  <xs:attribute name="Type" use="optional" default="Global">
   <xs:simpleType>
    <xs:restriction base="xs:string">
     <xs:enumeration value="Global"/>
     <xs:enumeration value="Thermal"/>
     <xs:enumeration value="Actual"/>
     <xs:enumeration value="Standard"/>
    </xs:restriction>
   </xs:simpleType>
  </xs:attribute>
 </xs:extension>
</xs:simpleContent>
</xs:complexType>
```


complexType **Node**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Location** **Status** **SetPoints** **Limits** **Comment**
used by	element **Configuration/Nodes/Node**
attributes	Name Type Use Default Fixed Annotation

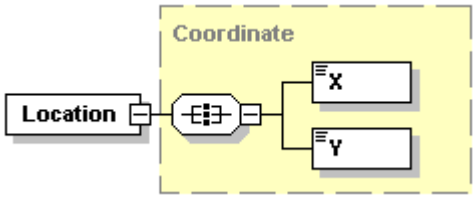
	Name	xs:string	required
	Elevation	Elevation	required
annotation	documentation	Node Definition	

source

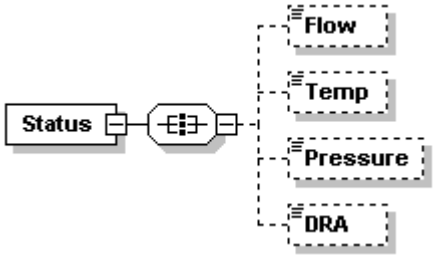
```
<xs:complexType name="Node">
 <xs:annotation>
  <xs:documentation>Node Definition</xs:documentation>
 </xs:annotation>
 <xs:all>
  <xs:element name="Location" type="Coordinate" minOccurs="0"/>
  <xs:element name="Status" minOccurs="0">
   <xs:complexType>
    <xs:all>
     <xs:element name="Flow" type="Flow" minOccurs="0"/>
     <xs:element name="Temp" type="Temperature" minOccurs="0"/>
     <xs:element name="Pressure" type="Pressure" minOccurs="0"/>
     <xs:element name="DRA" minOccurs="0">
      <xs:complexType>
       <xs:simpleContent>
        <xs:extension base="xpsl:ppm">
         <xs:attribute name="Name" type="xs:string" use="required"/>
        </xs:extension>
       </xs:simpleContent>
      </xs:complexType>
     </xs:element>
    </xs:all>
   </xs:complexType>
  </xs:element>
```

```
<xs:element name="SetPoints" type="SetPointsType" minOccurs="0"/>
<xs:element name="Limits" minOccurs="0">
 <xs:complexType>
  <xs:all>
   <xs:element name="LAOP" type="Pressure" minOccurs="0"/>
   <xs:element name="MAOP" type="Pressure" minOccurs="0"/>
  </xs:all>
 </xs:complexType>
</xs:element>
<xs:element name="Comment" type="xs:string" minOccurs="0"/>
</xs:all>
<xs:attribute name="Name" type="xs:string" use="required"/>
<xs:attribute name="Elevation" type="Elevation" use="required"/>
</xs:complexType>
```

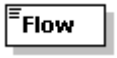

element **Node/Location**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Coordinate**
children	**X Y**
source	<xs:element name="Location" type="Coordinate" minOccurs="0"/>

element **Node/Status**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Flow** **Temp** **Pressure** **DRA**
source	<xs:element name="Status" minOccurs="0"> <xs:complexType> <xs:all> <xs:element name="Flow" type="Flow" minOccurs="0"/> <xs:element name="Temp" type="Temperature" minOccurs="0"/> <xs:element name="Pressure" type="Pressure" minOccurs="0"/> <xs:element name="DRA" minOccurs="0"> <xs:complexType> <xs:simpleContent> <xs:extension base="xpsl:ppm"> <xs:attribute name="Name" type="xs:string" use="required"/> </xs:extension> </xs:simpleContent> </xs:complexType> </xs:element> </xs:all> </xs:complexType> </xs:element>

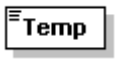
element **Node/Status/Flow**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Flow**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		

source	<xs:element name="Flow" type="Flow" minOccurs="0"/>

element **Node/Status/Temp**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Temperature**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		

source	<xs:element name="Temp" type="Temperature" minOccurs="0"/>

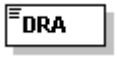
element **Node/Status/Pressure**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**

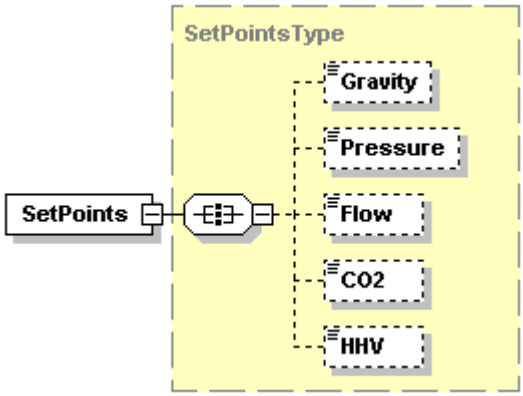
attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		

source	<xs:element name="Pressure" type="Pressure" minOccurs="0"/>

element **Node/Status/DRA**

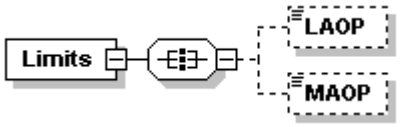
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	extension of **ppm**
attributes	Name: Name; Type: xs:string; Use: required; Default: ; Fixed: ; Annotation:
source	<xs:element name="DRA" minOccurs="0"> <xs:complexType> <xs:simpleContent> <xs:extension base="xpsl:ppm"> <xs:attribute name="Name" type="xs:string" use="required"/> </xs:extension> </xs:simpleContent> </xs:complexType> </xs:element>

element **Node/SetPoints**

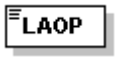
diagram	
namespace	http://tempuri.org/xpsl.xsd

type	**SetPointsType**
children	**Gravity** **Pressure** **Flow** **CO2** **HHV**
source	<xs:element name="SetPoints" type="SetPointsType" minOccurs="0"/>

element **Node/Limits**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**LAOP** **MAOP**
source	<xs:element name="Limits" minOccurs="0"> <xs:complexType> <xs:all> <xs:element name="LAOP" type="Pressure" minOccurs="0"/> <xs:element name="MAOP" type="Pressure" minOccurs="0"/> </xs:all> </xs:complexType> </xs:element>

element **Node/Limits/LAOP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="LAOP" type="Pressure" minOccurs="0"/>

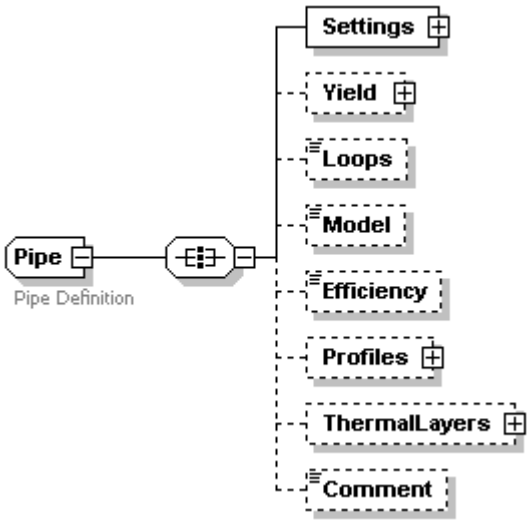
element **Node/Limits/MAOP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="MAOP" type="Pressure" minOccurs="0"/>

element **Node/Comment**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:string**
source	<xs:element name="Comment" type="xs:string" minOccurs="0"/>

complexType **Pipe**

diagram	

namespace	http://tempuri.org/xpsl.xsd
children	**Settings Yield Loops Model Efficiency Profiles ThermalLayers Comment**
used by	element **Configuration/Pipes/Pipe**

attributes

Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
FromNode	xs:string	required			
ToNode	xs:string	required			

annotation: documentation — Pipe Definition

source

```
<xs:complexType name="Pipe">
 <xs:annotation>
  <xs:documentation>Pipe Definition</xs:documentation>
 </xs:annotation>
 <xs:all>
  <xs:element name="Settings" type="xpsl:PipeInfo"/>
  <xs:element name="Yield" minOccurs="0">
   <xs:complexType>
    <xs:all>
     <xs:element name="Modulus" type="Tensile_Strength" minOccurs="0"/>
     <xs:element name="Yield" type="Pressure" minOccurs="0"/>
     <xs:element name="Plastic" type="Pressure" minOccurs="0"/>
     <xs:element name="Poisson" type="xs:float" minOccurs="0"/>
     <xs:element name="SafetyFactor" type="xs:float" minOccurs="0"/>
    </xs:all>
   </xs:complexType>
  </xs:element>
  <xs:element name="Loops" type="xs:integer" default="1" minOccurs="0"/>
  <xs:element name="Model" default="Moody" minOccurs="0">
```

```
    <xs:simpleType>
     <xs:restriction base="xs:string">
      <xs:enumeration value="Weymouth"/>
      <xs:enumeration value="DarcyWeisbach"/>
      <xs:enumeration value="Moody"/>
      <xs:enumeration value="PanhandleB"/>
      <xs:enumeration value="PanhandleA"/>
      <xs:enumeration value="AGA"/>
     </xs:restriction>
    </xs:simpleType>
   </xs:element>
   <xs:element name="Efficiency" type="xpsl:Efficiency" default="1" minOccurs="0"/>
   <xs:element name="Profiles" minOccurs="0">
    <xs:complexType>
     <xs:sequence>
      <xs:element name="Profile" type="xpsl:Profile" maxOccurs="unbounded"/>
     </xs:sequence>
    </xs:complexType>
   </xs:element>
   <xs:element name="ThermalLayers" minOccurs="0">
    <xs:complexType>
     <xs:sequence>
      <xs:element name="ThermalLayer" type="ThermalLayer" maxOccurs="unbounded"/>
     </xs:sequence>
    </xs:complexType>
   </xs:element>
   <xs:element name="Comment" type="xs:string" minOccurs="0"/>
```

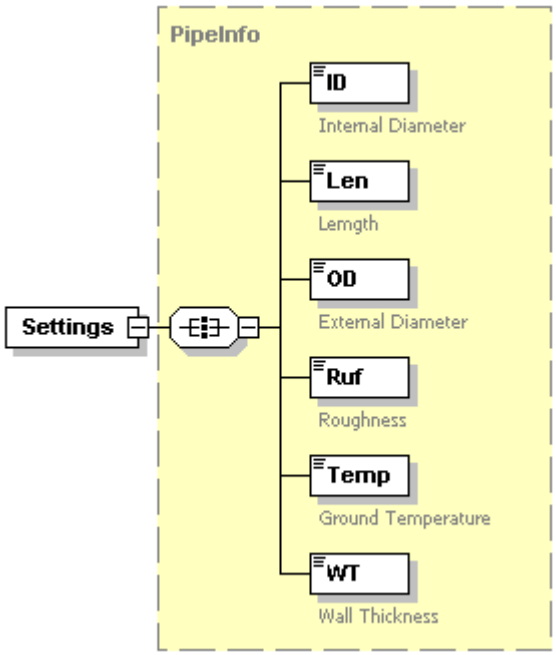
```
  </xs:all>

  <xs:attributeGroup ref="xpsl:InlineDevice"/>

</xs:complexType>
```

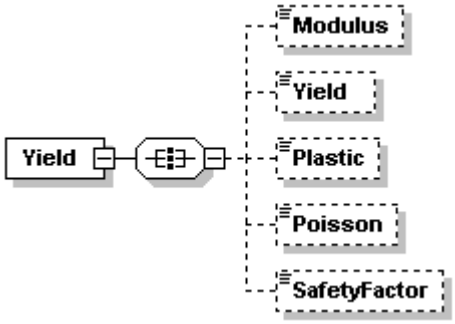
element **Pipe/Settings**

diagram

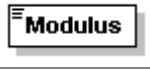


namespace	http://tempuri.org/xpsl.xsd
type	**PipeInfo**
children	**ID Len OD Ruf Temp WT**
source	<xs:element name="Settings" type="xpsl:PipeInfo"/>

element **Pipe/Yield**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Modulus Yield Plastic Poisson SafetyFactor**
source	<xs:element name="Yield" minOccurs="0"> <xs:complexType> <xs:all> <xs:element name="Modulus" type="Tensile_Strength" minOccurs="0"/> <xs:element name="Yield" type="Pressure" minOccurs="0"/> <xs:element name="Plastic" type="Pressure" minOccurs="0"/> <xs:element name="Poisson" type="xs:float" minOccurs="0"/> <xs:element name="SafetyFactor" type="xs:float" minOccurs="0"/> </xs:all> </xs:complexType> </xs:element>

element **Pipe/Yield/Modulus**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Tensile_Strength**

facets	minInclusive 0
source	<xs:element name="Modulus" type="Tensile_Strength" minOccurs="0"/>

element **Pipe/Yield/Yield**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="Yield" type="Pressure" minOccurs="0"/>

element **Pipe/Yield/Plastic**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="Plastic" type="Pressure" minOccurs="0"/>

element **Pipe/Yield/Poisson**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="Poisson" type="xs:float" minOccurs="0"/>

element **Pipe/Yield/SafetyFactor**

diagram	SafetyFactor
namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
source	<xs:element name="SafetyFactor" type="xs:float" minOccurs="0"/>

element **Pipe/Loops**

diagram	Loops
namespace	http://tempuri.org/xpsl.xsd
type	**xs:integer**
source	<xs:element name="Loops" type="xs:integer" default="1" minOccurs="0"/>

element **Pipe/Model**

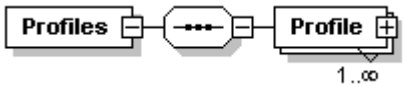
diagram	Model
namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
facets	enumeration Weymouth enumeration DarcyWeisbach enumeration Moody enumeration PanhandleB enumeration PanhandleA enumeration AGA
source	<xs:element name="Model" default="Moody" minOccurs="0">

```
<xs:simpleType>
 <xs:restriction base="xs:string">
  <xs:enumeration value="Weymouth"/>
  <xs:enumeration value="DarcyWeisbach"/>
  <xs:enumeration value="Moody"/>
  <xs:enumeration value="PanhandleB"/>
  <xs:enumeration value="PanhandleA"/>
  <xs:enumeration value="AGA"/>
 </xs:restriction>
</xs:simpleType>
</xs:element>
```


element **Pipe/Efficiency**

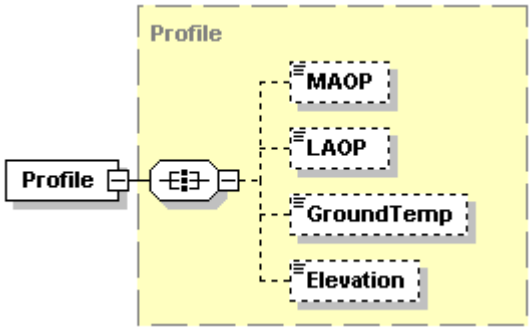
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Efficiency**
facets	minExclusive 0
source	<xs:element name="Efficiency" type="xpsl:Efficiency" default="1" minOccurs="0"/>

element **Pipe/Profiles**

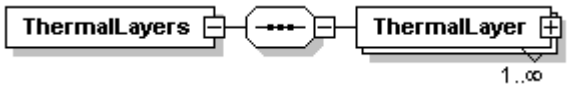
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Profile**
source	<xs:element name="Profiles" minOccurs="0"> <xs:complexType>

```
    <xs:sequence>
      <xs:element name="Profile" type="xpsl:Profile" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element **Pipe/Profiles/Profile**

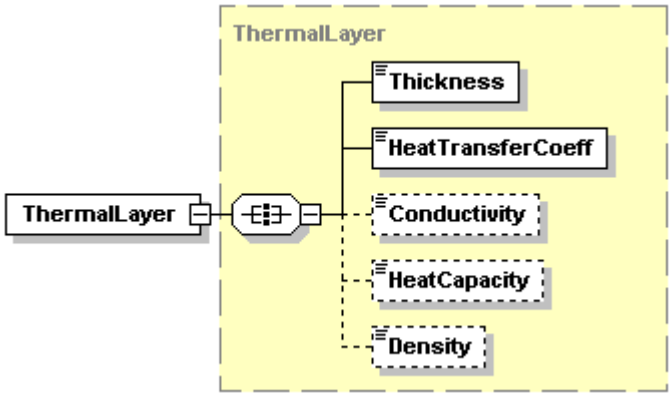
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Profile**
children	**MAOP LAOP GroundTemp Elevation**
attributes	Name: Location; Type: xpsl:Length; Use: required; Default: ; Fixed: ; Annotation:
source	<xs:element name="Profile" type="xpsl:Profile" maxOccurs="unbounded"/>

element **Pipe/ThermalLayers**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**ThermalLayer**
source	<xs:element name="ThermalLayers" minOccurs="0"> <xs:complexType>

```
    <xs:sequence>
      <xs:element name="ThermalLayer" type="ThermalLayer" maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

element **Pipe/ThermalLayers/ThermalLayer**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**ThermalLayer**
children	**Thickness HeatTransferCoeff Conductivity HeatCapacity Density**

attributes

Name	Type	Use	Default	Fixed	Annotation
Layer	xs:int	required			
Type	xs:string	required			

source

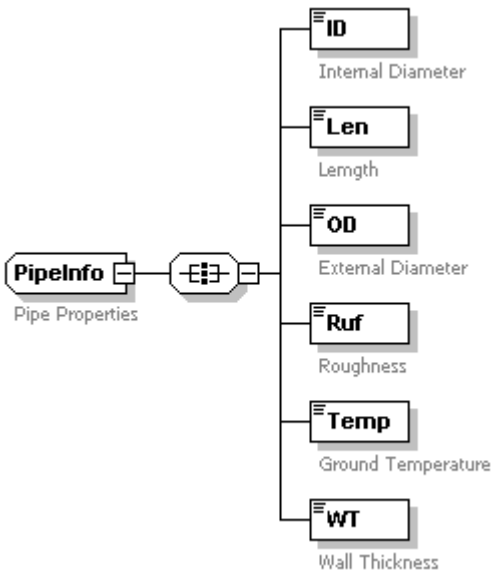
```
<xs:element name="ThermalLayer" type="ThermalLayer" maxOccurs="unbounded"/>
```

element **Pipe/Comment**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**xs:string**

source	<xs:element name="Comment" type="xs:string" minOccurs="0"/>

complexType **PipeInfo**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	ID Len OD Ruf Temp WT
used by	element Pipe/Settings
annotation	documentation Pipe Properties
source	<xs:complexType name="PipeInfo"> <xs:annotation> <xs:documentation>Pipe Properties</xs:documentation> </xs:annotation> <xs:all> <xs:element name="ID" type="Diameter"> <xs:annotation> <xs:documentation>Internal Diameter</xs:documentation> </xs:annotation> </xs:element>

```
    <xs:element name="Len" type="Length">
     <xs:annotation>
      <xs:documentation>Lemgth</xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="OD" type="Diameter">
     <xs:annotation>
      <xs:documentation>External Diameter</xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="Ruf" type="Roughness">
     <xs:annotation>
      <xs:documentation>Roughness</xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="Temp" type="Temperature">
     <xs:annotation>
      <xs:documentation>Ground Temperature</xs:documentation>
     </xs:annotation>
    </xs:element>
    <xs:element name="WT" type="Diameter">
     <xs:annotation>
      <xs:documentation>Wall Thickness</xs:documentation>
     </xs:annotation>
    </xs:element>
   </xs:all>
  </xs:complexType>
```

element **PipeInfo/ID**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Diameter**
facets	minExclusive 0
annotation	documentation Internal Diameter
source	<xs:element name="ID" type="Diameter"> <xs:annotation> <xs:documentation>Internal Diameter</xs:documentation> </xs:annotation> </xs:element>

element **PipeInfo/Len**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Length**
facets	minInclusive 0
annotation	documentation Lemgth
source	<xs:element name="Len" type="Length"> <xs:annotation> <xs:documentation>Lemgth</xs:documentation> </xs:annotation> </xs:element>

element **PipeInfo/OD**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Diameter**
facets	minExclusive 0
annotation	documentation External Diameter
source	<xs:element name="OD" type="Diameter"> <xs:annotation> <xs:documentation>External Diameter</xs:documentation> </xs:annotation> </xs:element>

element **PipeInfo/Ruf**

diagram						
namespace	http://tempuri.org/xpsl.xsd					
type	**Roughness**					
attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
annotation	documentation Roughness					
source	<xs:element name="Ruf" type="Roughness"> <xs:annotation> <xs:documentation>Roughness</xs:documentation> </xs:annotation>					

	</xs:element>

element **PipeInfo/Temp**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Temperature**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
annotation	documentation: Ground Temperature
source	<xs:element name="Temp" type="Temperature"> <xs:annotation> <xs:documentation>Ground Temperature</xs:documentation> </xs:annotation> </xs:element>

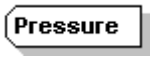
element **PipeInfo/WT**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Diameter**
facets	minExclusive 0
annotation	documentation: Wall Thickness
source	<xs:element name="WT" type="Diameter"> <xs:annotation> <xs:documentation>Wall Thickness</xs:documentation>

```
  </xs:annotation>

</xs:element>
```

complexType **Pressure**

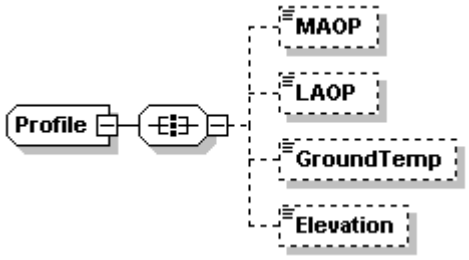
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	extension of **xs:float**
used by	elements **Profile/LAOP** **Node/Limits/LAOP** **Profile/MAOP** **Node/Limits/MAOP** **Pipe/Yield/Plastic** **SetPointsType/Pressure** **Node/Status/Pressure** **Regulator/SetPoints/SPD** **Compressor/SetPoints/SPPD** **Compressor/SetPoints/SPPS** **Regulator/SetPoints/SPU** **Pipe/Yield/Yield**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		

source

```
<xs:complexType name="Pressure">
 <xs:simpleContent>
  <xs:extension base="xs:float">
   <xs:attribute name="Type" use="optional" default="Global">
    <xs:simpleType>
     <xs:restriction base="xs:string">
      <xs:enumeration value="Global"/>
      <xs:enumeration value="Gauge"/>
      <xs:enumeration value="Absolute"/>
      <xs:enumeration value="Standard"/>
     </xs:restriction>
    </xs:simpleType>
   </xs:attribute>
  </xs:extension>
 </xs:simpleContent>
</xs:complexType>
```

complexType **Profile**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**MAOP** **LAOP** **GroundTemp** **Elevation**
used by	element **Pipe/Profiles/Profile**
attributes	Name: Location; Type: xpsl:Length; Use: required; Default: ; Fixed: ; Annotation:
source	<xs:complexType name="Profile"> <xs:all> <xs:element name="MAOP" type="xpsl:Pressure" minOccurs="0"/> <xs:element name="LAOP" type="xpsl:Pressure" minOccurs="0"/> <xs:element name="GroundTemp" type="xpsl:Temperature" minOccurs="0"/> <xs:element name="Elevation" type="xpsl:Elevation" minOccurs="0"/> </xs:all> <xs:attribute name="Location" type="xpsl:Length" use="required"/> </xs:complexType>

element **Profile/MAOP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
source	<xs:element name="MAOP" type="xpsl:Pressure" minOccurs="0"/>					

element **Profile/LAOP**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
source	<xs:element name="LAOP" type="xpsl:Pressure" minOccurs="0"/>					

element **Profile/GroundTemp**

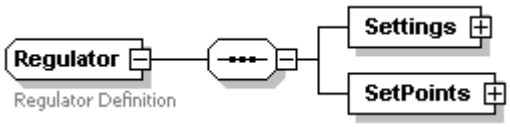
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Temperature**

attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
source	<xs:element name="GroundTemp" type="xpsl:Temperature" minOccurs="0"/>					

element **Profile/Elevation**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Elevation**
source	<xs:element name="Elevation" type="xpsl:Elevation" minOccurs="0"/>

complexType **Regulator**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Settings** **SetPoints**
used by	element **Configuration/Devices/Regulator**

attributes

Name	Type	Use	Default	Fixed	Annotation
Name	xs:string	required			
FromNode	xs:string	required			
ToNode	xs:string	required			

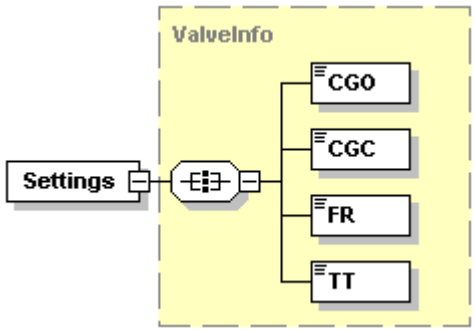
annotation: documentation — Regulator Definition

source

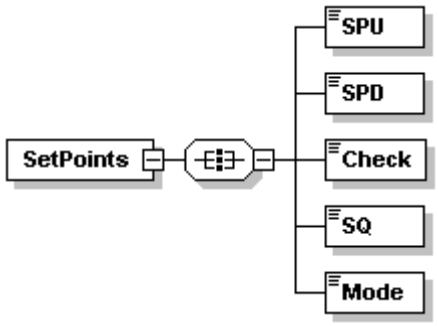
```
<xs:complexType name="Regulator">
 <xs:annotation>
  <xs:documentation>Regulator Definition</xs:documentation>
 </xs:annotation>
 <xs:sequence>
  <xs:element name="Settings" type="ValveInfo"/>
  <xs:element name="SetPoints">
   <xs:complexType>
    <xs:all>
     <xs:element name="SPU" type="Pressure"/>
     <xs:element name="SPD" type="Pressure"/>
     <xs:element name="Check" type="YesNo"/>
     <xs:element name="SQ" type="Flow"/>
     <xs:element name="Mode" type="RegMode"/>
```

```
      </xs:all>
    </xs:complexType>
  </xs:element>
 </xs:sequence>
 <xs:attributeGroup ref="InlineDevice"/>
</xs:complexType>
```

element **Regulator/Settings**

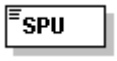
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**ValveInfo**
children	**CGO CGC FR TT**
source	<xs:element name="Settings" type="ValveInfo"/>

element **Regulator/SetPoints**

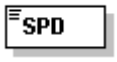
diagram	
namespace	http://tempuri.org/xpsl.xsd

children	**SPU SPD Check SQ Mode**
source	<xs:element name="SetPoints"> <xs:complexType> <xs:all> <xs:element name="SPU" type="Pressure"/> <xs:element name="SPD" type="Pressure"/> <xs:element name="Check" type="YesNo"/> <xs:element name="SQ" type="Flow"/> <xs:element name="Mode" type="RegMode"/> </xs:all> </xs:complexType> </xs:element>

element **Regulator/SetPoints/SPU**

diagram						
namespace	http://tempuri.org/xpsl.xsd					
type	**Pressure**					
attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
source	<xs:element name="SPU" type="Pressure"/>					

element **Regulator/SetPoints/SPD**

diagram						
namespace	http://tempuri.org/xpsl.xsd					
type	**Pressure**					
attributes	Name	Type	Use	Default	Fixed	Annotation

	Type	xs:string	optional	Global		
source	<xs:element name="SPD" type="Pressure"/>					

element **Regulator/SetPoints/Check**

diagram	Check					
namespace	http://tempuri.org/xpsl.xsd					
type	YesNo					
facets	enumeration	Yes				
	enumeration	No				
source	<xs:element name="Check" type="YesNo"/>					

element **Regulator/SetPoints/SQ**

diagram	SQ					
namespace	http://tempuri.org/xpsl.xsd					
type	Flow					
attributes	Name	Type	Use	Default	Fixed	Annotation
	Type	xs:string	optional	Global		
source	<xs:element name="SQ" type="Flow"/>					

element **Regulator/SetPoints/Mode**

diagram	Mode					
namespace	http://tempuri.org/xpsl.xsd					
type	RegMode					
facets	enumeration	UP				
	enumeration	DOWN				

	enumeration FLOW
source	<xs:element name="Mode" type="RegMode"/>

complexType **Roughness**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	extension of **xs:float**
used by	element **PipeInfo/Ruf**

attributes

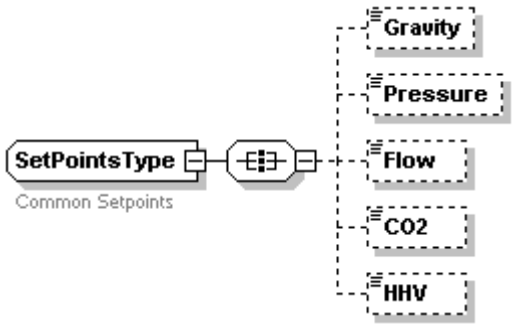
Name	Type	Use	Default	Fixed	Annotation
Type	xs:string	optional	Global		

source

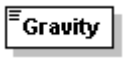
```
<xs:complexType name="Roughness">
 <xs:simpleContent>
  <xs:extension base="xs:float">
   <xs:attribute name="Type" use="optional" default="Global">
    <xs:simpleType>
     <xs:restriction base="xs:string">
      <xs:enumeration value="Global"/>
      <xs:enumeration value="Moody"/>
      <xs:enumeration value="Fanning"/>
      <xs:enumeration value="Nikuradse"/>
      <xs:enumeration value="DarcyWeisbach"/>
     </xs:restriction>
    </xs:simpleType>
   </xs:attribute>
  </xs:extension>
 </xs:simpleContent>
```

	</xs:complexType>

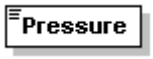
complexType **SetPointsType**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Gravity** **Pressure** **Flow** **CO2** **HHV**
used by	element **Node/SetPoints**
annotation	documentation Common Setpoints
source	<xs:complexType name="SetPointsType"> <xs:annotation> <xs:documentation>Common Setpoints</xs:documentation> </xs:annotation> <xs:all> <xs:element name="Gravity" type="Gravity" minOccurs="0"/> <xs:element name="Pressure" type="Pressure" minOccurs="0"/> <xs:element name="Flow" type="Flow" minOccurs="0"/> <xs:element name="CO2" type="Fraction" minOccurs="0"/> <xs:element name="HHV" type="Heat_Value" minOccurs="0"/> </xs:all> </xs:complexType>

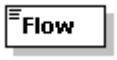
element **SetPointsType/Gravity**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Gravity**
facets	minExclusive 0
source	<xs:element name="Gravity" type="Gravity" minOccurs="0"/>

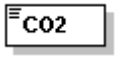
element **SetPointsType/Pressure**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Pressure**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="Pressure" type="Pressure" minOccurs="0"/>

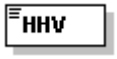
element **SetPointsType/Flow**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Flow**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:element name="Flow" type="Flow" minOccurs="0"/>

element **SetPointsType/CO2**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Fraction**
source	<xs:element name="CO2" type="Fraction" minOccurs="0"/>

element **SetPointsType/HHV**

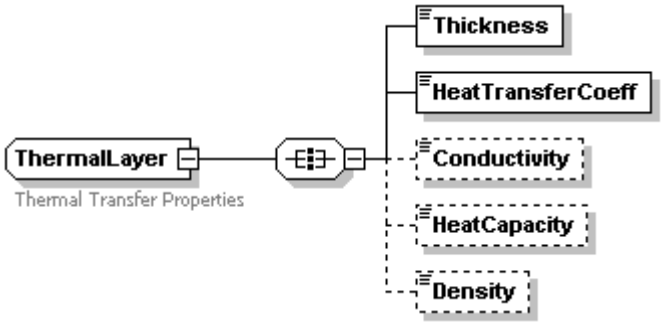
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Heat_Value**
facets	minExclusive 0
source	<xs:element name="HHV" type="Heat_Value" minOccurs="0"/>

complexType **Temperature**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	extension of **xs:float**
used by	elements **Profile/GroundTemp** **PipeInfo/Temp** **Node/Status/Temp**
attributes	Name: Type; Type: xs:string; Use: optional; Default: Global; Fixed: ; Annotation:
source	<xs:complexType name="Temperature"> <xs:simpleContent> <xs:extension base="xs:float">

```
    <xs:attribute name="Type" use="optional" default="Global">
     <xs:simpleType>
      <xs:restriction base="xs:string">
       <xs:enumeration value="Global"/>
       <xs:enumeration value="Gauge"/>
       <xs:enumeration value="Absolute"/>
       <xs:enumeration value="Standard"/>
      </xs:restriction>
     </xs:simpleType>
    </xs:attribute>
   </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```


complexType **ThermalLayer**

diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**Thickness** **HeatTransferCoeff** **Conductivity** **HeatCapacity** **Density**
used by	element **Pipe/ThermalLayers/ThermalLayer**

attributes

Name	Type	Use	Default	Fixed	Annotation
Layer	xs:int	required			
Type	xs:string	required			

annotation	documentation Thermal Transfer Properties

source

```
<xs:complexType name="ThermalLayer">
 <xs:annotation>
  <xs:documentation>Thermal Transfer Properties</xs:documentation>
 </xs:annotation>
 <xs:all>
  <xs:element name="Thickness" type="Diameter"/>
  <xs:element name="HeatTransferCoeff" type="Heat_Transfer_Coefficient"/>
  <xs:element name="Conductivity" type="Thermal_Conductivity" minOccurs="0"/>
  <xs:element name="HeatCapacity" type="Heat_Capacity" minOccurs="0"/>
  <xs:element name="Density" type="Density" minOccurs="0"/>
 </xs:all>
 <xs:attribute name="Layer" use="required">
  <xs:simpleType>
   <xs:restriction base="xs:int">
    <xs:minInclusive value="0"/>
   </xs:restriction>
  </xs:simpleType>
 </xs:attribute>
 <xs:attribute name="Type" use="required">
  <xs:simpleType>
   <xs:restriction base="xs:string">
    <xs:enumeration value="Ground"/>
    <xs:enumeration value="Insulation"/>
    <xs:enumeration value="Pipe"/>
   </xs:restriction>
  </xs:simpleType>
```

	</xs:attribute> </xs:complexType>

element **ThermalLayer/Thickness**

diagram	Thickness
namespace	http://tempuri.org/xpsl.xsd
type	**Diameter**
facets	minExclusive 0
source	<xs:element name="Thickness" type="Diameter"/>

element **ThermalLayer/HeatTransferCoeff**

diagram	HeatTransferCoeff
namespace	http://tempuri.org/xpsl.xsd
type	**Heat_Transfer_Coefficient**
facets	minInclusive 0
source	<xs:element name="HeatTransferCoeff" type="Heat_Transfer_Coefficient"/>

element **ThermalLayer/Conductivity**

diagram	Conductivity
namespace	http://tempuri.org/xpsl.xsd
type	**Thermal_Conductivity**
facets	minInclusive 0
source	<xs:element name="Conductivity" type="Thermal_Conductivity" minOccurs="0"/>

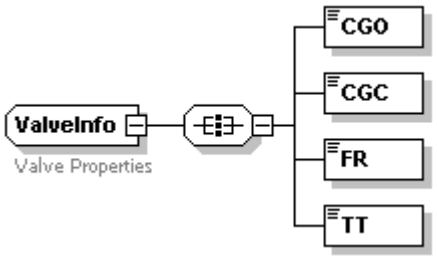
element **ThermalLayer/HeatCapacity**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Heat_Capacity**
facets	minInclusive 0
source	<xs:element name="HeatCapacity" type="Heat_Capacity" minOccurs="0"/>

element **ThermalLayer/Density**

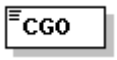
diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Density**
facets	minInclusive 0
source	<xs:element name="Density" type="Density" minOccurs="0"/>

complexType **ValveInfo**

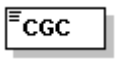
diagram	
namespace	http://tempuri.org/xpsl.xsd
children	**CGO CGC FR TT**
used by	elements **BlockValve/Settings CheckValve/Settings Regulator/Settings**
annotation	documentation Valve Properties

source	<xs:complexType name="ValveInfo"> <xs:annotation> <xs:documentation>Valve Properties</xs:documentation> </xs:annotation> <xs:all> <xs:element name="CGO" type="Valve_Coefficient"/> <xs:element name="CGC" type="Valve_Coefficient"/> <xs:element name="FR" type="Fraction"/> <xs:element name="TT" type="Time"/> </xs:all> </xs:complexType>

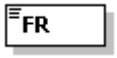
element **ValveInfo/CGO**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Valve_Coefficient**
facets	minExclusive 0
source	<xs:element name="CGO" type="Valve_Coefficient"/>

element **ValveInfo/CGC**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Valve_Coefficient**
facets	minExclusive 0
source	<xs:element name="CGC" type="Valve_Coefficient"/>

element **ValveInfo/FR**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Fraction**
source	<xs:element name="FR" type="Fraction"/>

element **ValveInfo/TT**

diagram	
namespace	http://tempuri.org/xpsl.xsd
type	**Time**
source	<xs:element name="TT" type="Time"/>

simpleType **Bulk_Modulus**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Bulk_Modulus"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Comp_Control**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
used by	element **Compressor/Controls/CONT**
facets	enumeration Suction enumeration Discharge enumeration Power
source	<xs:simpleType name="Comp_Control"> <xs:restriction base="xs:string"> <xs:enumeration value="Suction"/> <xs:enumeration value="Discharge"/> <xs:enumeration value="Power"/> </xs:restriction> </xs:simpleType>

simpleType **CompressorTypes**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
used by	attribute **Compressor/@Type**
facets	enumeration Centrifugal enumeration Reciprocating enumeration General
source	<xs:simpleType name="CompressorTypes"> <xs:restriction base="xs:string"> <xs:enumeration value="Centrifugal"/>

	<xs:enumeration value="Reciprocating"/> <xs:enumeration value="General"/> </xs:restriction> </xs:simpleType>

simpleType **Density**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **ThermalLayer/Density**
facets	minInclusive 0
source	<xs:simpleType name="Density"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Diameter**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	elements **PipeInfo/ID** **PipeInfo/OD** **ThermalLayer/Thickness** **PipeInfo/WT**
facets	minExclusive 0
source	<xs:simpleType name="Diameter"> <xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Efficiency**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **Pipe/Efficiency**
facets	minExclusive 0
source	<xs:simpleType name="Efficiency"> <xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Elevation**

namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
used by	element **Profile/Elevation** attribute **Node/@Elevation**
source	<xs:simpleType name="Elevation"> <xs:restriction base="xs:float"/> </xs:simpleType>

simpleType **Fraction**

namespace	http://tempuri.org/xpsl.xsd
type	**xs:nonNegativeInteger**
used by	elements **SetPointsType/CO2** **ValveInfo/FR**

source	<xs:simpleType name="Fraction"> <xs:restriction base="xs:nonNegativeInteger"/> </xs:simpleType>

simpleType **Fuel_Ratio**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Fuel_Ratio"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Gravity**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	elements **SetPointsType/Gravity** **External/SetPoints/SSG**
facets	minExclusive 0
source	<xs:simpleType name="Gravity"> <xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Head**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Head"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Heat_Capacity**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **ThermalLayer/HeatCapacity**
facets	minInclusive 0
source	<xs:simpleType name="Heat_Capacity"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Heat_Transfer_Coefficient**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**

used by	element **ThermalLayer/HeatTransferCoeff**
facets	minInclusive 0
source	<xs:simpleType name="Heat_Transfer_Coefficient"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Heat_Value**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **SetPointsType/HHV**
facets	minExclusive 0
source	<xs:simpleType name="Heat_Value"> <xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Inertia**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Inertia"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/>

	</xs:restriction> </xs:simpleType>

simpleType **Length**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **PipeInfo/Len** attribute **Profile/@Location**
facets	minInclusive 0
source	<xs:simpleType name="Length"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Percent**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Percent"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Power**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	elements **Compressor/Limits/MXPW** **CompressorInfo/PWR** **Compressor/SetPoints/SPPW**
facets	minInclusive 0
source	<xs:simpleType name="Power"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **ppm**

namespace	http://tempuri.org/xpsl.xsd
type	**xs:float**
used by	element **Node/Status/DRA**
source	<xs:simpleType name="ppm"> <xs:restriction base="xs:float"/> </xs:simpleType>

simpleType **Ratio**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	elements **Compressor/Limits/RMAX** **Compressor/Limits/RMIN**
facets	minExclusive 0

source	<xs:simpleType name="Ratio"> <xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **RegMode**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
used by	element **Regulator/SetPoints/Mode**
facets	enumeration UP enumeration DOWN enumeration FLOW
source	<xs:simpleType name="RegMode"> <xs:restriction base="xs:string"> <xs:enumeration value="UP"/> <xs:enumeration value="DOWN"/> <xs:enumeration value="FLOW"/> </xs:restriction> </xs:simpleType>

simpleType **Space_Volume**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minExclusive 0
source	<xs:simpleType name="Space_Volume">

	<xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Speed**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Speed"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Status**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
used by	elements **External/Status/Flow** **External/Status/Pressure**
facets	enumeration Known enumeration Unknown
source	<xs:simpleType name="Status"> <xs:restriction base="xs:string"> <xs:enumeration value="Known"/> <xs:enumeration value="Unknown"/> </xs:restriction>

	</xs:simpleType>

simpleType **Tensile_Strength**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **Pipe/Yield/Modulus**
facets	minInclusive 0
source	<xs:simpleType name="Tensile_Strength"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Thermal_Conductivity**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	element **ThermalLayer/Conductivity**
facets	minInclusive 0
source	<xs:simpleType name="Thermal_Conductivity"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Time**

namespace	http://tempuri.org/xpsl.xsd
type	**xs:time**
used by	elements **Compressor/Controls/START** **Compressor/Controls/STOP** **ValveInfo/TT**
source	<xs:simpleType name="Time"> <xs:restriction base="xs:time"/> </xs:simpleType>

simpleType **Torque**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Torque"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Valve_Coefficient**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
used by	elements **CompressorInfo/C** **ValveInfo/CGC** **ValveInfo/CGO**
facets	minExclusive 0
source	<xs:simpleType name="Valve_Coefficient">

	<xs:restriction base="xs:float"> <xs:minExclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **Velocity**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:float**
facets	minInclusive 0
source	<xs:simpleType name="Velocity"> <xs:restriction base="xs:float"> <xs:minInclusive value="0"/> </xs:restriction> </xs:simpleType>

simpleType **YesNo**

namespace	http://tempuri.org/xpsl.xsd
type	restriction of **xs:string**
used by	element **Regulator/SetPoints/Check**
facets	enumeration Yes enumeration No
source	<xs:simpleType name="YesNo"> <xs:restriction base="xs:string"> <xs:enumeration value="Yes"/> <xs:enumeration value="No"/> </xs:restriction>

	</xs:simpleType>

attributeGroup **EndDevice**

namespace	http://tempuri.org/xpsl.xsd
used by	complexType **External**
attributes	Name: Name, Type: xs:string, Use: required; Name: Node, Type: xs:string, Use: required
source	<xs:attributeGroup name="EndDevice"> <xs:attribute name="Name" type="xs:string" use="required"/> <xs:attribute name="Node" type="xs:string" use="required"/> </xs:attributeGroup>

attributeGroup **InlineDevice**

namespace	http://tempuri.org/xpsl.xsd
used by	complexTypes **BlockValve** **CheckValve** **Compressor** **Pipe** **Regulator**
attributes	Name: Name, Type: xs:string, Use: required; Name: FromNode, Type: xs:string, Use: required; Name: ToNode, Type: xs:string, Use: required
source	<xs:attributeGroup name="InlineDevice"> <xs:attribute name="Name" type="xs:string" use="required"/> <xs:attribute name="FromNode" type="xs:string" use="required"/> <xs:attribute name="ToNode" type="xs:string" use="required"/> </xs:attributeGroup>