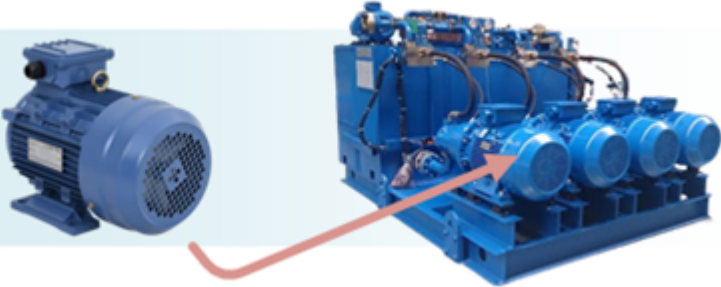


Structure

A structure is a way of organizing multiple variables, often of different types, into a group. For example, the characteristics of several devices, such as motors, can be described using the same data groups.

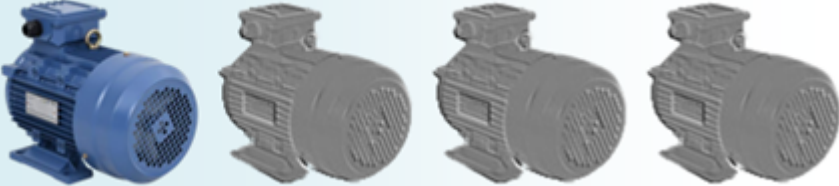
Take an electric motor, for instance. Such a motor can have many technical parameters, but for simplicity, let's narrow down the range of these parameters.

„motorId“ : string
„voltage“ : real
„current“ : real
„mode“ : byte
„status“ : byte
„local“ : byte



In this case, the motor has a text identifier, typically a KKS identifier in larger installations. Then there are voltage and current measurements, an operating mode, and a status indication. These data belong together and describe a motor. In the example above, this motor is, for example, the first motor of a hydraulic block. In the case of multiple motors, this structure remains—only the parameters change, as this makes it easy to handle the data uniformly:

„hydraulicmotor_1“ : struct	„hydraulicmotor_2“	„hydraulicmotor_3“	„hydraulicmotor_4“
„motorId“ : string			
„voltage“ : real			
„current“ : real			
„mode“ : byte			
„status“ : byte			
„local“ : byte			



This is what it looks like in the TIA Portal when the structures are open:

motors					
	Name	Data type	Start value	Monitor value	Comment
▼	Static				
▼	hydraulicMotor_1	Struct			
■	motorId	String	'1 4LAC01'	'1 4LAC01'	1 4LAC01 Hydraulicpumpe
■	voltage	Real	402.0	402.0	1 4LAC01 CE001 (V)
■	current	Real	5.2	5.2	1 4LAC01 CE002 (A)
■	mode	Byte	3	16#03	1 4LAC01 CE003 (On, Off, Auto)
■	status	Byte	1	16#01	1 4LAC01 CE004 (Run, Stop, Error)
■	local	Byte	1	16#01	1 4LAC01 CE005 (remote, local)
▼	hydraulicMotor_2	Struct			
■	motorId	String	'1 4LAC02'	'1 4LAC02'	1 4LAC02 Hydraulicpumpe
■	voltage	Real	400.3	400.3	1 4LAC02 CE001 (V)
■	current	Real	0.0	0.0	1 4LAC02 CE002 (A)
■	mode	Byte	3	16#03	1 4LAC02 CE003 (On, Off, Auto)
■	status	Byte	2	16#02	1 4LAC02 CE004 (Run, Stop, Error)
■	local	Byte	1	16#01	1 4LAC02 CE005 (remote, local)
▼	hydraulicMotor_3	Struct			
■	motorId	String	'1 4LAC03'	'1 4LAC03'	1 4LAC03 Hydraulicpumpe
■	voltage	Real	402.0	402.0	1 4LAC03 CE001 (V)
■	current	Real	0.0	0.0	1 4LAC03 CE002 (A)

The display of structures can be limited to just their names, with an arrow placed in front of the name to close the content:

motors				
Name	Data type	Start value	Monitor value	Comment
▼ Static				
▶ hydraulicMotor_1	Struct			
▶ hydraulicMotor_2	Struct			
▶ hydraulicMotor_3	Struct			
▶ hydraulicMotor_4	Struct			



More information:
TIA Datatypes: [S7 data types summary table](#)

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