

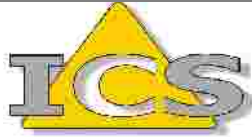
Technical Description		
AS-Interface Temperature Sensor	Article No. TS001	

Appendix: Device Profile according to IEC 61915-1

Manufacturer's Device Profile Header			
Manufacturer's device profile ID: 0001	Manufacturer's device profile description: Rev. 1.0	Manufacturer's device profile version: V 1.0	Manufacturer's device profile release date: 2003-08-21
Manufacturer ID: 0001	Model compatibility: <????????>	Software compatibility: <????????>	Hardware compatibility: <????????>
Profile type: Device	Profile availability: no	Additional information:	

Root device profile ID: n.a.		Root device profile version: n.a.					
Parameter name	Data type	Units	Offset	Multi-plier	Range	Access	Parameter Description
Limit 1 exceeded (D2)	BOOL	na	na	na	na	R	binary data
Limit 2 exceeded (D3)	BOOL	na	na	na	na	R	binary data
Temperature	UINT	°C	-500	0,1	-50...+150	R	output of temperature sensor
Diagnosis	BYTE	na	na	na	na	R	Byte 0 of Diagnosis object
AS-Interface Vendor ID	WORD	na	na	na	na	R	Bytes 0 to 1 of ID object
AS-Interface Product ID	WORD	na	na	na	na	R	Bytes 2 to 3 of ID object
Compatibility Information	BYTE	na	na	na	na	R	Byte 4 of ID object
Version Number	BYTE	na	na	na	na	R	Byte 5 of ID object
Param.: Limit 1 on	UINT	°C	-500	0,1	-50...+150	RW	Limit 1 on: if exceeded D2 will be set
Param.: Limit 2 on	UINT	°C	-500	0,1	-50...+150	RW	Limit 2 on: if exceeded D3 will be set
Param.: Limit 1 off	UINT	°C	-500	0,1	-50...+150	RW	Limit 1 off: if T is below Limit 1 D2 will be reset
Param.: Limit 2 off	UINT	°C	-500	0,1	-50...+150	RW	Limit 2 off: if T is below Limit 2 D3 will be reset

Parameter Assemblies (Manufacturer-specific)									
Parameter assembly name: Binary data:				Access: R		Required: M		Implemented: Yes	
Bit	3			2		1		0	
	Limit 1			Limit 2		r		r	
Parameter assembly name: Serial data: acyclic read service request (Get ID)				Access: R		Required: M		Implemented: Yes	
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)								
	7	6	5	4	3	2	1	0	
0	16								
1	0								
2	6								
Parameter assembly name: Serial data: acyclic read service requ. (Get Diagnosis)				Access: R		Required: M		Implemented: Yes	
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)								
	7	6	5	4	3	2	1	0	
0	16								
1	1								
2	1								



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Parameter assembly name:		Access: R		Required: M		Implemented: Yes		
Serial data: acyclic read service requ. (Get Parameter)								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	7	6	5	4	3	2	1	0
0	16							
1	2							
2	8							
Parameter assembly name:		Access: R		Required: M		Implemented: Yes		
Serial data: acyclic read service response (ID-String)								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	15	14	13	12	11	10	9	8
	7	6	5	4	3	2	1	0
0	80							
1	1 (Vendor ID)							
2	1 (Product ID)							
3	1 (Product ID)							
4	1 (Product ID)							
5	0	0	0	0	1	0	1	0
6	1			0				
Parameter assembly name:		Access: R		Required: M		Implemented: Yes		
Serial data: acyclic read service response (Diagnosis)								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	7	6	5	4	3	2	1	0
0	80							
1	(diagnosis)							
Parameter assembly name:		Access: R		Required: M		Implemented: Yes		
Serial data: acyclic read service response (Parameter)								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	15	14	13	12	11	10	9	8
	7	6	5	4	3	2	1	0
0	80							
1	Parameter: Temperature Limit 1 on							
2	Parameter: Temperature Limit 1 off							
3	Parameter: Temperature Limit 1 off							
4	Parameter: Temperature Limit 1 off							
5	Parameter: Temperature Limit 2 on							
6	Parameter: Temperature Limit 2 on							
7	Parameter: Temperature Limit 2 off							
8	Parameter: Temperature Limit 2 off							
Parameter assembly name:		Access: W		Required: M		Implemented: Yes		
Serial data: acyclic write service request (Parameter)								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	15	14	13	12	11	10	9	8
	7	6	5	4	3	2	1	0
0	17							
1	2							
2	8							
3	Parameter: Temperature Limit 1 on							
4	Parameter: Temperature Limit 1 on							
5	Parameter: Temperature Limit 1 off							
6	Parameter: Temperature Limit 1 off							
7	Parameter: Temperature Limit 2 on							
8	Parameter: Temperature Limit 2 on							
9	Parameter: Temperature Limit 2 off							
10	Parameter: Temperature Limit 2 off							

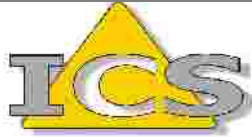
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Parameter assembly name:		Access: R	Required: M	Implemented: Yes				
Serial data: acyclic read service response not ok								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	7	6	5	4	3	2	1	0
0	144							
1	error code							

Parameter assembly name:		Access: R	Required: M	Implemented: Yes				
Serial data: acyclic write service response								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	7	6	5	4	3	2	1	0
0	81							

Parameter assembly name:		Access: R	Required: M	Implemented: Yes				
Serial data: acyclic write service response not ok								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	7	6	5	4	3	2	1	0
0	145							
1	error code							

Parameter assembly name:		Access: R	Required: M	Implemented: Yes				
Serial data: cyclic data from slave								
Byte	Bits: (0-7 for byte constructions; 0-15 for word constructions)							
	15	14	13	12	11	10	9	8
	7	6	5	4	3	2	1	0
0	0							
1	Temperature							
2								



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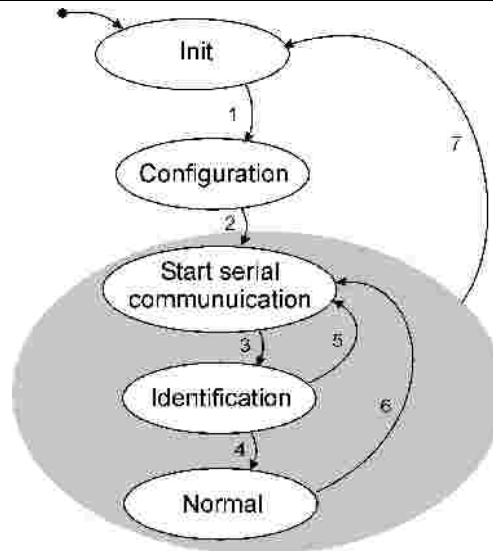
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AS-Interface Temperature Sensor

Device Behaviour (Manufacturer-specific)

State Model (Root Device Profile)

Statechart Diagram



State Transition Table

State Name		State Description	
initialisation		initial state of the device upon power-up. The device switches all outputs into off-state.	
configuration		The device is available for all AS-i commands except "Data_Exchange". The device is waiting for a command "Write_Parameter"	
start serial communication		The device is waiting for the master to initialise serial data communication. Binary data bits are valid.	
identification		The device is waiting for the message "Get ID". It will not respond to any other message.	
normal		The device is available for automatic operation.	
Transition	Initial State	Final State	Transition Condition
1	initialisation	configuration	initialisation performed without error
2	configuration	start serial comm.	"Write_Parameter" received and processed without error
3	start serial comm.	identification	serial communication successfully established
4	identification	normal	Get ID and ID-String messages exchanged
5	identification	start serial comm.	serial communication error (e.g. timeout)
6	normal	start serial comm.	serial communication error (e.g. timeout)
7		initialisation	timeout of data communication (>40ms without "Data_Exchange")