

**Data Sheet PK 18 AF 1**

**Device**

<b>PK 18 AF 1</b>	
<b>Description</b>	Electronic temperature sensor, 0...1000°C
<b>Manufacturer</b>	Keller HCW GmbH
<b>URL</b>	<a href="http://www.keller-msr.de">www.keller-msr.de</a>
<b>Vendor ID / Device ID</b>	0x0340 / 0x001201
<b>IODD V1.0.1</b>	KELLER-001201-20221222-IODD1.0.1.xml
<b>IODD V1.1</b>	KELLER-001201-20221222-IODD1.1.xml

**Communication parameters**

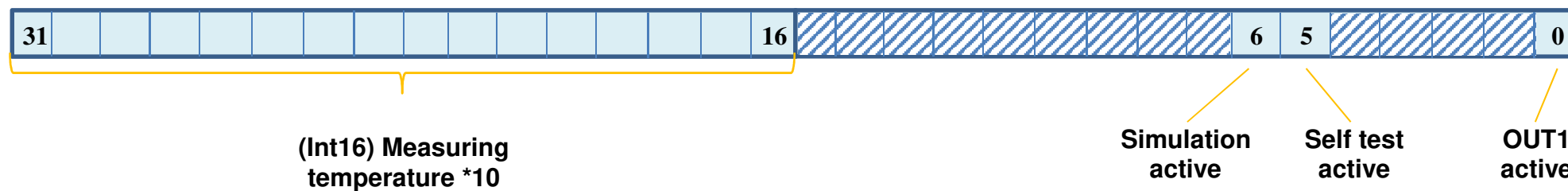
<b>IO-Link Revision</b>	V1.1, downward compatible V1.0.1
<b>SIO-Mode</b>	Yes, supported
<b>Transmission rate</b>	COM2 (38,400 Baud)
<b>Frame type</b>	TYPE_0 with 8 Byte OD data in PreOperate
	TYPE_2_V with 2 Byte OD data in Operate
<b>Process input data length</b>	32 bits
<b>Process output data length</b>	0 bits
<b>Min. cycle time</b>	3.6 ms

**Features**

<b>Block parameter setting</b>	yes
<b>Data retention</b>	yes
<b>Smart Sensor Profil</b>	SensorIdentification, ProcessDataVariable, SensorDiag
<b>AccessLocks</b>	LocalUserInterface, DataStorage

**Process data (cyclic)**
**Input data 32 bits (PDin)**

Name	Remarks	Data type	bitOffset	bitLength	Value range	Increments	Offset	Unit
<b>Temperature</b>	Current measuring temperature	Int16	16	16	0..10000 32759: OL -32759: UL	0.1	0	°C
<b>Simulation</b>	Status of simulation function	Bool	6	1	0: inactive 1: active			
<b>Self-test</b>	Status of self- test function	Bool	5	1	0: inactive 1: active			
<b>OUT1</b>	Status of switching output 1	Bool	0	1	0: inactive 1: active			

**32 Bit process input data**


**Service data (acyclic)**
**Parameters**

Name	Idx.	Remarks	Subindex/ bitOffset	Data type	Length	Access	Value range	Default	Increment	Offset	Unit
<b>Access blocked</b>	<b>12</b>	Device -access blocked	Sub 0	Record	16 Bit	rw					
		Data retention	Bit 1	Bool	1 Bit		0: open 1: blocked	0			
		Local parameter setting	Bit 3	Bool	1 Bit		0: open 1: blocked	0			
<b>PDInputDescr.</b>	<b>14</b>	Input data format	Sub 0	Bool	96 Bit	ro		03 10 10h 01 01 06h 01 01 05h 01 01 00h			
<b>Manufacturer name</b>	<b>16</b>	Name of manufacturer	Sub 0	String	15 Byte	ro		Keller HCW GmbH			
<b>Manufacturer text</b>	<b>17</b>	Further information	Sub 0	String	17 Byte	ro		www.keller-msr.de			
<b>Product name</b>	<b>18</b>	Product designation	Sub 0	String	10 Byte	ro		PK 18 AF 1			
<b>ProductID</b>	<b>19</b>	Article designation	Sub 0	String	10 Byte	ro		PK 18 AF 1			
<b>Product text</b>	<b>20</b>	Device description	Sub 0	String	27 Byte	ro		Infrared temperature sensor			
<b>Serial number</b>	<b>21</b>	Serial number of device	Sub 0	String	max. 12 Byte	ro					
<b>Hardware Rev.</b>	<b>22</b>	Hardware revision	Sub 0	String	2 Byte	ro		01			
<b>Firmware Rev.</b>	<b>23</b>	Firmware revision	Sub 0	String	max. 15 Byte	ro		1.0.0			
<b>User text</b>	<b>24</b>	Available space for any text messages	Sub 0	String	max. 32 Byte	rw		***			

Name	Idx.	Remarks	Subindex/ bitOffset	Data type	Length	Access	Value range	Default	Incre- ment	Offset	Unit
<b>Device status</b>	<b>36</b>	Current operating status	Sub 0	UInt8	1 Byte	ro	0: OK 1: Maintenance 2: Specification 3: Function prog. 4: Error				
<b>Detailed status</b>	<b>37</b>	Detailed status	Sub 0	UInt8	30 Byte	ro		00 00 00h			
<b>Process data</b>	<b>40</b>	Input process data	Sub 0	Record	32 Bit	ro	see PDin				
<b>BitCodedEvents</b>	<b>545</b>	Bit mask for current events	Sub 0	Record	32 Bit	ro					
		Internal temporary memory error	Bit 0	Bool	1 Bit		0: noEv 1: Event 0x1800	0			
		Internal max. temperature exceeded	Bit 1	Bool	1 Bit		0: noEv 1: Event 0x4210	0			
		Invalid calibration	Bit 2	Bool	1 Bit		0: noEv 1: Event 0x1810	0			
		Self-test active	Bit 3	Bool	1 Bit		0: noEv 1: Event 0x1811	0			
		Temperature simulation active	Bit 4	Bool	1 Bit		0: noEv 1: Event 0x8C01	0			
		Hardware error	Bit 5	Bool	1 Bit		0: noEv 1: Event 0x5000	0			
		24V supply voltage instable	Bit 6	Bool	1 Bit		0: noEv 1: Event 0x5111	0			
		Test event 1	Bit 30	Bool	1 Bit		0: noEv 1: Event 0x8DFE	0			
		Test event 2	Bit 31	Bool	1 Bit		0: noEv 1: Event 0x8DFF	0			
<b>ParaConfigFaultCollection</b>	<b>546</b>	List of incorrectly set parameters	Sub 0	UInt32	40 Byte	ro		0			

Name	Idx.	Remarks	Subindex/ bitOffset	Data type	Length	Access	Value range	Default	Incre- ment	Offset	Unit
<b>Loc</b>	<b>550</b>	Sensor lock can be reset on device	Sub 0	UInt8	1 Byte	rw	0: Loc 1: uLoc	1			
<b>Unit</b>	<b>551</b>	Temperature unit	Sub 0	UInt8	1 Byte	rw	0: °C 1: °F	0			
<b>Out1</b>	<b>580</b>	Function Out1	Sub 0	UInt8	1 Byte	rw	3: Normally open [no] 4: Normally closed [nc]	3			
<b>dS1</b>	<b>581</b>	Input delay Out1	Sub 0	UInt16	2 Byte	rw	0..100	0	0.1	0	s
<b>dr1</b>	<b>582</b>	Output delay Out1	Sub 0	UInt16	2 Byte	rw	0..100	0	0.1	0	s
<b>SP_FH1</b>	<b>583</b>	Switching point	Sub 0	Int16	2 Byte	rw	10..10000	2500	0.1	0	°C
<b>rP_FL1</b>	<b>584</b>	Reset (restart) point	Sub 0	Int16	2 Byte	rw	0..9990	2300	0.1	0	°C
<b>ao2</b>	<b>629</b>	Range Out2	Sub 0	UInt8	1 Byte	rw	0: 0..20mA 1: 4..20mA	1			
<b>ASP2</b>	<b>630</b>	Analogue start point Out2	Sub 0	Int16	2 Byte	rw	0..9500	0	0.1	0	°C
<b>AEP2</b>	<b>631</b>	Analogue end point Out2	Sub 0	Int16	2 Byte	rw	500..10000	5000	0.1	0	°C
<b>Disp</b>	<b>5000</b>	Display function	Sub 0	UInt8	1 Byte	rw	0: Off ("run") 1: On (Temp.)	1			
<b>ITemp</b>	<b>5010</b>	Internal temperature	Sub 0	Int16	2 Byte	ro	-500..1500		0.1	0	°C
<b>TSim</b>	<b>5020</b>	Default temperature simulation	Sub 0	Int16	2 Byte	rw	0..10000	0	0.1	0	°C
<b>EPSI</b>	<b>6100</b>	Emissivity correction	Sub 0	Int16	2 Byte	rw	100..1100	1000	0.1	0	%
<b>PhLd</b>	<b>6110</b>	Peak hold	Sub 0	UInt16	2 Byte	rw	0..9999	0	0.1	0	s
<b>dAP</b>	<b>6120</b>	Attenuation	Sub 0	UInt16	2 Byte	rw	0..9999	0	0.1	0	s

## System commands

Name	Index	Value	Remarks	Data type	Length	Access
Standard command	2			UInt8	1 Byte	wo
		130	Factory reset – restore factory status			
		178	Start self-test (Test automatically ends after 10 sec.)			
		179	Start Temperature simulation			
		180	End temperature simulation			
		240	Trigger test event 1 (0x8DFE)			
		241	Cancel test event 1 (0x8DFE)			
		242	Trigger test event 2 (0x8DFF)			
		243	Cancel test event 2 (0x8DFF)			
		255	No function (for internal use only)			

## Device status (Index 36)

Status value	Status	Trigger event	Measures
0	Standard operation		
1	Maintenance necessary	-	
2	Beyond specification	Maximum admissible internal temperature exceeded	Let device cool down
		Insufficient calibration data	Initiate calibration
		Unstable supply voltage	Check supply voltage
3	Functional test	Test function active	Check measured value
		Temperature simulation function active	Check measured value
4	Unrecoverable error	EEPROM storage data corrupted	Exchange device

## Error codes / Events

Code	Typ	Name	Anmerkung
0x1800	Warning	EEPROM storage error	Storage error – data restored
0x1810	Warning	Invalid calibration data	Calibration data not complete – initiate calibration
0x1811	Warning	Self-test function active	Sensor is actively overloaded – check measured values
0x4210	Warning	Internal temperature exceeded	Maximum admissible internal temperature exceed – let device cool down
0x5000	Error	Hardware error	Invalid measured values – exchange device
0x5111	Warning	Unstable supply voltage	Check supply voltage
0x8C01	Warning	Temperature simulation active	Measured temperature is simulated – check measured values
0x8DFE	Warning	Test event 1	Event 1 for IO-Link device test
0x8DFF	Warning	Test event 2	Event 2 for IO-Link device test

## Connection plan

