Data Sheet PK 11 AF 2

IO-Link

Device

PK 11 AF 2	
Description	Electronic temperature sensor, 0…1000°C
Manufacturer	Keller HCW GmbH
URL	www.keller-msr.de
Vendor ID / Device ID	0x0340 / 0x000B02
IODD V1.0.1	KELLER-000B02-20221221-IODD1.0.1.xml
IODD V1.1	KELLER-000B02-20221221-IODD1.1.xml

Communication parameters

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

Features

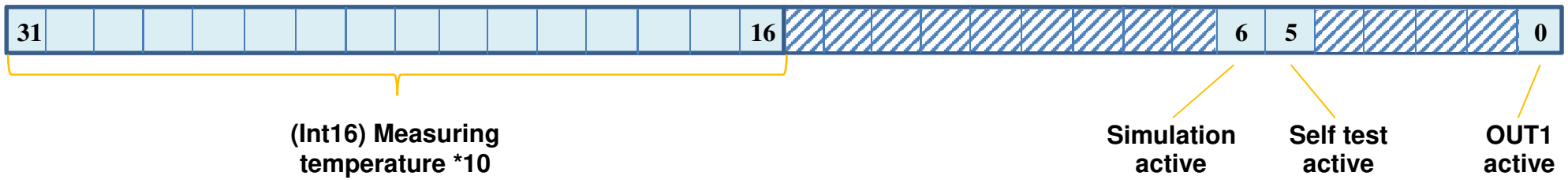
Block parameter setting	yes
Data retention	yes
Smart-Sensor-Profil	SensorIdentification, ProcessDataVariable, SensorDiag
AccessLocks	LocalUserInterface, DataStorage

Process data (cyclic)

Input data 32 bits (PDin)

Name	Remarks	Data type	bitOffset	bitLength	Value range	Increments	Offset	Unit
Temperature	Current measuring temperature	Int16	16	16	0..10000 32759: OL -32759: UL	0.1	0	°C
Simulation	Status of simulation function	Bool	6	1	0: inactive 1: active			
Self-test	Status of self- test function	Bool	5	1	0: inactive 1: active			
OUT1	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	Incre-ment	Offset	Unit
Access blocked	**12**	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			
PDInputDescr.	**14**	Input data format	Sub 0	Bool	96 Bit	ro		03 10 10h 01 01 06h 01 01 05h 01 01 00h			
Manufacturer name	**16**	Name of manufacturer	Sub 0	String	15 Byte	ro		Keller HCW GmbH			
Manufacturer text	**17**	Further information	Sub 0	String	17 Byte	ro		www.keller-msr.de			
Product name	**18**	Product designation	Sub 0	String	10 Byte	ro		PK 11 AF 2			
ProductID	**19**	Article designation	Sub 0	String	10 Byte	ro		PK 11 AF 2			
Product text	**20**	Device description	Sub 0	String	27 Byte	ro		Infrared temperature sensor			
Serial number	**21**	Serial number of device	Sub 0	String	max. 12 Byte	ro					
Hardware Rev.	**22**	Hardware revision	Sub 0	String	2 Byte	ro		01			
Firmware Rev.	**23**	Firmware revision	Sub 0	String	max. 15 Byte	ro		1.0.0			
User text	**24**	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
Device status	**36**	Current operating status	Sub 0	UInt8	1 Byte	ro	0: OK 1: Maintenance 2: Specification 3: Function prog. 4: Error				
Detailed status	**37**	Detailed status	Sub 0	UInt8	30 Byte	ro		00 00 00h			
Process data	**40**	Input process data	Sub 0	Record	32 Bit	ro	See PDin				
BitCodedEvents	**545**	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			
ParaConfigFaultCollection	**546**	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
Loc	**550**	Sensor lock can be reset on device	Sub 0	UInt8	1 Byte	rw	0: Loc 1: uLoc	1			
Unit	**551**	Temperature unit	Sub 0	Uint8	1 Byte	rw	0: °C 1: °F	0			
Out1	**580**	Function Out1	Sub 0	UInt8	1 Byte	rw	3: Normally open [no] 4: Normally closed [nc]	3			
dS1	**581**	Input delay Out1	Sub 0	UInt16	2 Byte	rw	0..100	0	0.1	0	s
dr1	**582**	Output delay Out1	Sub 0	UInt16	2 Byte	rw	0..100	0	0.1	0	s
SP_FH1	**583**	Switching point	Sub 0	Int16	2 Byte	rw	10..10000	2500	0.1	0	°C
rP_FL1	**584**	Reset (restart) point	Sub 0	Int16	2 Byte	rw	0..9990	2300	0.1	0	°C
ao2	**629**	Range Out2	Sub 0	UInt8	1 Byte	rw	0: 0..20mA 1: 4..20mA	1			
ASP2	**630**	Analogue start point Out2	Sub 0	Int16	2 Byte	rw	0..9500	0	0.1	0	°C
AEP2	**631**	Analogue end point Out2	Sub 0	Int16	2 Byte	rw	500..10000	10000	0.1	0	°C
Disp	**5000**	Display function	Sub 0	UInt8	1 Byte	rw	0: Off ("run") 1: On (Temp.)	1			
ITemp	**5010**	Internal temperature	Sub 0	Int16	2 Byte	ro	-500..1500		0.1	0	°C
TSim	**5020**	Default temperature simulation	Sub 0	Int16	2 Byte	rw	0..10000	0	0.1	0	°C
EPSI	**6100**	Emissivity correction	Sub 0	Int16	2 Byte	rw	100..1100	1000	0.1	0	%
PhLd	**6110**	Peak hold	Sub 0	UInt16	2 Byte	rw	0..9999	0	0.1	0	s
dAP	**6120**	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 (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