IODD device description for Capacitive Sensor Series KS-801-26 (LevelMaster)

Version:	1.0
Release Date:	18.02.2020
Copyright:	Rechner Industrie-Elekronik GmbH

KAS

Vendor ID:	1129d/0469h
Vendor Name:	Rechner Industrie-Elektronik
Vendor Text:	www.rechner-sensors.com
Vendor URL:	https://www.rechner-sensors.com/dokumentation/io-link
Device ID:	2d/000002h

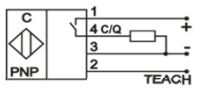
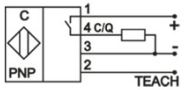
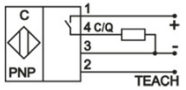
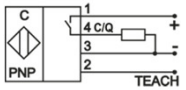
Communication

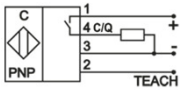
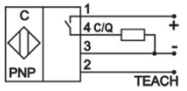
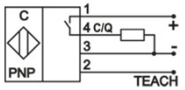
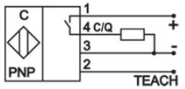
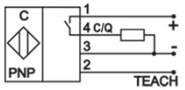
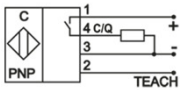
IO-Link:	V1.2
Bitrate:	COM3
Minimum Cycle Time:	1 ms
SIO Mode Supported:	Yes

Features

Block parametrization	Yes
Data storage	Yes

Device Variants

KA1611	Capacitive Sensos, Series 801-26, KS-801-26/86-S-G1/2-PEEK/VAb-IOL-Y3-ETW-HP		
KA1612	Capacitive Sensor, Series 801-26, KS-801-26/86-S-PFG1/2-PEEK/VAb-IOL-Y3-ETW-HP		
KA1613	Capacitive Sensor, Series 801-26, KS-801-26/86-S-G1-PEEK/VAb-IOL-Y3-ETW-HP		
KA1614	Capacitive Sensor, Series 810-26, KS-801-26/86-S-NPT1/2-PEEK/VAb-IOL-Y3-ETW-HP		

KA1615	Capacitive Sensor, Series 801-26, KS-801-26/86-S-TRI-PEEK/VAc-IOL-Y3-ETW-HP		
KA1616	Capacitive Sensor, Series 801-26, KS-801-26/400-S-D18-PEEK/VAb-IOL-Y3-ETW-HP		
KA1617	Capacitive Sensor, Series 801-26, KS-801-26/86-S-G1/2-PEEK/VAb-IOL-Y3-ETW-HP		
KA1618	Capacitive Sensor, Series 801-26, KS-801-26/86-S-G1/2-PEEK/VAb-IOL-Y3-ETW-HP		
KA1619	Capacitive Sensor, Series 801-26, KS-801-26/136-S-G1/2TP21-PEEK/VAb-160C-IOL-Y3-ETW-HP		
KA1620	Capacitive Sensor, Series 801-26, KS-801-26/136-S-G1/2-PEEK/VAb-120C-IOL-Y3-ETW-HP		

*** depends on the product

Variables

Name	Description	Index	Subindex, BitOffset	Data type	(max) Length	Access Rights	Def-ault	Value (range)	Gradi-ent	Off-set	Unit
Standard command		**2**	**Sub0**	**UInteger**	**8 Bit**	**wo**					
Empty adjustment								65		0	
Full adjustment								75		0	
Reset	Restore Factory Settings							130		0	
Function test on	BDC1 switch pulsating							180		0	
Function test off								181		0	
PDV correction1	Run PDV correction1							190		0	
PDV correction2	Run PDV correction2							191		0	
PDV correction1	Clear PDV correction1							192		0	
PDV correction2	Clear PDV correction2							193		0	
PDV correction enable	Enable PDV correction							194		0	
PDV correction disable	Disable PDV correction							195		0	
IO-Link 1.1 Test A	Command triggers Event 8DFE to appear							240		0	
	Command triggers Event 8DFE to disappear							241		0	
IO-Link 1.1 Test B	Command triggers Event 8DFF to appear							242		0	
	Command triggers Event 8DFF to disappear							243		0	
Device Access Locks		**12**	**Sub0**	**RecordT**	**16 Bit**	**rw**					
Data storage	Parameter Synchronization between Master and Device		1	BooleanT	1 Bit		0	0=unlock, 1=locked			
Local Parameterization	Teach-in function (ET) lock		2	BooleanT	1 Bit		0	0=unlock, 1=locked			
Vendor Name	**Rechner Industrie-Elektronik**	**16**	**Sub0**		**32 Byte**	**ro**				**0**	
Vendor Text	**www.rechner.de**	**17**	**Sub0**		**32 Byte**	**ro**				**0**	
Product Name	**KA*** **	**18**	**Sub0**		**32 Byte**	**ro**				**0**	
Product ID	**KA*** **	**19**	**Sub0**		**32 Byte**	**ro**				**0**	
Product Text	**KAS**	**20**	**Sub0**		**32 Byte**	**ro**				**0**	
Hardware Version	**FBG*** **	**21**	**Sub0**		**32 Byte**	**ro**				**0**	
Firmware Version	**CSW*** **	**23**	**Sub0**		**16 Byte**	**ro**				**0**	
Application Specific Tag		**24**	**Sub0**		**16 Byte**	**rw**				**0**	
Teach Channel	**Standard TeachIn Channel (BDC1)**	**58**	**Sub0**	**UInteger**	**8 Bit**	**rw**	**1**	**1=BDC1**			
Teach State	**TeachIn State (BDC1)**	**59**	**Sub0**	**UInteger**	**4 Bit**	**ro**		**0 to 15**		**0**	
Teach State 0	Idle							0			
Teach State 4	Wait for command							4			
Teach State 5	Busy							5			

Teach State 7	Error							7			
Teach State 12	Empty adjustment Success							12			
Teach State 13	Full adjustment Success							13			

SP	**Smart Sensor Profile: BDC switchpoints**	**60**		**RecordT**	**32 Bit**	**rw**					
Switchpoint 1	Setpoint of BDC1 (SP.Lo)		Sub1	UIntegerT	10 Bit			0 … 1023		16	
Switchpoint 2	Setpoint of BDC2		Sub2					(not used)			

SP	**Smart Sensor Profile: BDC switchpoints configuration**	**61**		**RecordT**	**32 Bit**	**rw**					
Switch point logic	logic		Sub1	UIntegerT	8 Bit		0	0=Normally open (NO), 1=Normally closes (NC)		24	
Switch point mode	Fctn		Sub2	UIntegerT	8 Bit		1	1=Single Point		16	
Hysteresis	HY		Sub3	UIntegerT	16 Bit		0	0 ... 1023	1	0	

PDV limits	**Process data value limits**	**64**		**RecordT**	**32 Bit**	**ro**					
PDV Min			Sub1	UInteger	16 Bit		0		1	16	
PDV Max			Sub2	UInteger	16 Bit		1023		1	0	

dAP	**Damping process value PDV**	**74**	**Sub0**	**UIntegerT**	**16 Bit**	**rw**	**0**	**0 to 2.000**	**1**	**0**	**ms**

dS	**Switch-on delay both BDC**	**76**	**Sub0**	**UIntegerT**	**16 Bit**	**rw**	**0**	**0 to 60.000**	**1**	**0**	**ms**

dr	**Switch-off delay both BDC**	**78**	**Sub0**	**UIntegerT**	**16 Bit**	**rw**	**0**	**0 to 60.000**	**1**	**0**	**ms**

T [Bit]	**Temperature Bit Value**	**90**	**Sub0**	**UIntegerT**	**16 Bit**	**r**	**0**	0 ... 1023	**1**	**0**	
T [°C]	**Temperature Value in °C**	**91**	**Sub0**	**IntegerT**	**16 Bit**	**r**	**0**	-40 … 125	**1**	**0**	**°C**

ServiceModePassword	**de-/activate PDV correction commands**	**200**	**Sub0**	**RecordT**	**32 Bit**	**wo**	**0**	**0 to 4.294.967.295**	**1**	**0**	

PDV correction state		**80**	**Sub0**	**UIntegerT**	**16 Bit**	**ro**	**0**	**1 = PDV correction1 complete, 2 = PDV correction2 complete, 3 = correction enabled**		**0**	

Events

Event codes (HEX/Dez)	Name	Type	Description
18 50 / 6224	Data Flash error	Error	Read-error or Write-error
18 51 / 6225	Meas-value overvoltage detected	Warning	Noise detected or Device defect
18 70 / 6256	Function test	Notification	Event appears by setting index 2 to value 180, Event disappears by setting index 2 to value 181
8D FE / 36350	IO-Link 1.1 Test A	Error	Event appears by setting index 2 to value 240, Event disappears by setting index 2 to value 241
8D FF / 36351	IO-Link 1.1 Test B	Error	Event appears by setting index 2 to value 242, Event disappears by setting index 2 to value 243

Error codes (HEX/Dez)	Name	Description
80 00 / 0	application error	Device application error (no details)
80 11 / 17	Index not available	Access to a non-existent index
80 12 / 18	Subindex not available	Access to a non-existent subindex
80 20 / 32	Service temporarily not available	The parameter is currently not accessible. The device does not allow this in the current state.
80 21 / 33	Service temporarily not available	Write access to a read-only parameter
80 23 / 35	Access denied	Denied access to a read-only parameter
80 30 / 48	Parameter value out of range	The written parameter value is outside the permissible value range
80 31 / 49	Parameter value above limit	Written parameter value is larger than allowed
80 32 / 50	Parameter value below limit	Written parameter value is smaller than allowed
80 33 / 51	Parameter length overrun	Written parameter length too large
80 34 / 52	Parameter length underrun	Written parameter value too small
80 40 / 64	Invalid parameter set	Written single parameter set collides with other parameter settings (for example, if the hysteresis parameter exceeds the
80 41 / 65	Inconsistent parameter set	Device plausibility check failed due to an inconsistent parameter set
80 82 / 130	Application not ready	Access was denied because the device is currently not ready

Process data / Process data input

Name	Description	Index	Subindex, BitOffset	Data type	(max) Length	Access Rights	Def-ault	Value (range)	Gradi-ent	Off-set	Unit
Process value	**PDV, Current process value**		**6**	**IntegerT**	**10 Bit**	**r**		**0 ... 1023**	**1**	**0**	
BDC1 switching state	**State depends on settings for BDC1**		**0**	**BooleanT**				**0=inactive (off), 1=active (on)**			

Process data structure	**PDV and BDC**
Bit(s)	**Description**
0	BDC1
1 - 5	not used
6	PDV_Bit0
7	PDV_Bit1
8	PDV_Bit2
9	PDV_Bit3
10	PDV_Bit4
11	PDV_Bit5
12	PDV_Bit6
13	PDV_Bit7
14	PDV_Bit8
15	PDV_Bit9