

Version V1.0.0

Ausgabedatum 2023-05-03

FR900020

Hersteller ID 780 / 0x30C
Geräte ID 5939201 / 0x5AA01
Herstellername ipf electronic gmbh
Hersteller URL <http://www.ipf.de>

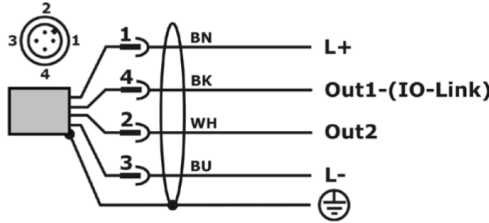

Kommunikation

IO-Link Revision V1.1
Bitrate Com2
Minimale Zykluszeit 3,4ms
SIO Mode unterstützt Ja
Prozessdatenbreite 32Bit (Frametyp Type_2_V)

Features

Blockparametrierung Ja
Datenhaltung Ja

Gerätevariante

FR900020	Elektronischer Füllstandssensor 10m 1/2"		
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Name	Beschreibung	Datentyp	Bitlänge	Wertebereich	Faktor	Offset	Einheit
Signal	Echo Qualität	UIntegerT	15	0..2500	0.1	-140	dB
Distanz	Abstand/Füllstand	IntegerT	15	-10000..10000	1	0	mm
Schaltzustand [Out2]	Status Schaltausgang [O2]	BooleanT		(false) inaktiv			
				(true) aktiv			
Schaltzustand [Out1]	Status Schaltausgang [O1]	BooleanT		(false) inaktiv			
				(true) aktiv			

PLC Input Mapping

							Druck	Out2	Out1						
PLC-In Word1	31						24	23					17	16	
PLC-In Word0	15						8	7					2	1	0

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
Standardkommando	2	Sub 0	UIntegerT	8Bit	wo		(128) Device Reset			
							(130) Auslieferungszustand Wiederherstellen			

Gerätezugriffssperren	12	Sub 0	RecordT	16Bit	rw					
		bitOffs 0	BooleanT	1 Bit		(false)	(false) Offen (true) Gesperrt			
Data Storage		bitOffs 1	BooleanT	1 Bit		(false)	(false) Offen (true) Gesperrt			

Vendor Name	16	Sub 0	StringT	64 Byte	ro	ipf electronic gmbh				

Vendor Text	17	Sub 0	StringT	64 Byte	ro	www.ipf.de				

Product Name	18	Sub 0	StringT	64 Byte	ro	Radar-Füllstandsensor				

Product ID	19	Sub 0	StringT	64 Byte	ro	FR900020				

Product Text	20	Sub 0	StringT	64 Byte	ro	Radar-Füllstandsensor				

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
SerialNumber										
	21	Sub 0	StringT	16 Byte	ro	0000000000				
Hardware Revision										
	22	Sub 0	StringT	64 Byte	ro	HW-V 001				
Firmware Revision										
	23	Sub 0	StringT	64 Byte	ro	FW-V 2.6.3				
Application Specific										
	24	Sub 0	StringT	24 Byte	rw	U4 10 1/2 0				
Device Status										
	36	Sub 0	UIntegerT	8 Bit	ro	0) Device is operating properly	0) Device is operating properly 1) Maintenance-Required 2) Out-of-Specification 3) Functional-Check 4) Failure 5-255 (Reserved)			
Detailed Device Status										
	37	Sub 0	UIntegerT	6 Bytes	ro	0x00 0x00 0x00	All octets 0x00: no Error/ Warning Octet 1: EventQualifier Octet 2,3: EventCode			

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
O1_Conf	Output 1; Configuration									
	64	Sub 0	RecordT	8 Bit	rw					
Polarity		bitOffs 0	booleanT	1 Bit		(false) NO	(false) NO (true) NC			
Operation Mode		bitOffs 2	UIntegerT	2 Bit		(0) PP	(0) PP			
Switch Mode		bitOffs 4	UIntegerT	3 Bit		(1) Single Point Mode	(0) deactivated (1) Single Point Mode (2) Window Mode (3) Two Point Mode (4) Show Error			

O1_SP	Output 1; SetPoint									
	65	Sub 0	Float32T		rw	700	0..10000	1	0	mm

O1_RP	Output 1; ResetPoint									
	66	Sub 0	Float32T		rw	690	0..10000	1	0	mm

O1_HY	Output 1; Hysteresis									
	67	Sub 0	Float32T		rw	10	0..1000	1	0	mm

O1_dS	Output 1; Set Delay									
	68	Sub 0	UIntegerT	16 Bit	rw	0	0 to 5000	0.01	0	s

O1_dR	Output 1; Reset Delay									
	69	Sub 0	UIntegerT	16 Bit	rw	0	0 to 5000	0.01	0	s

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
O1_Conf	Output 2; Configuration									
	70	Sub 0	RecordT	8 Bit	rw					
Polarity		bitOffs 0	booleanT	1 Bit		(false) NO	(false) NO (true) NC			
Operation Mode		bitOffs 2	UIntegerT	2 Bit		(0) PP	(0) PP (1) NPN (2) PNP (3) Analog Out			
Switch Mode		bitOffs 4	UIntegerT	3 Bit		(1) Single Point Mode	(0) deactivated (1) Single Point Mode (2) Window Mode (3) Two Point Mode (4) Show Error			

O2_SP	Output 2; SetPoint									
	71	Sub 0	Float32T		rw	1500	0..10000	1	0	mm

O2_RP	Output 2; ResetPoint									
	72	Sub 0	Float32T		rw	1450	0..10000	1	0	mm

O2_HY	Output 2; Hysteresis									
	73	Sub 0	Float32T		rw	10	0 to 1000	1	0	mm

O2_dS	Output 2; Set Delay									
	74	Sub 0	UIntegerT	16 Bit	rw	0	0 to 5000	0.01	0	s

O2_dR	Output 2; Reset Delay									
	75	Sub 0	UIntegerT	16 Bit	rw	0	0 to 5000	0.01	0	s

IODD_Gradient	IODD Gradient (used by Device for PD values)									
	90	Sub 0	Float32T		ro	1	Float32T			

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
IODD_Offset	IODD Offset (used by Device for PD values)									
	91	Sub 0	IntegerT	16 Bit	ro	0	0..65535			

Unit	Unit selector for menu									
	101	Sub 0	UIntegerT	8 Bit	rw	(49) mm	(45) m (49) mm			

TeachZero	Set zero offset									
	102	Sub 0	Float32T		rw	0	0..10000	1	0	mm

Damp1	Damping									
	104	Sub 0	UIntegerT	16 Bit	rw	2 (0.02s)	0 to 12000	0.01	0	sec

Peak_max	Max. Peak value									
	106	Sub 0	Float32T		ro	0	0..10000	1	0	mm

Peak_min	Min. Peak value									
	107	Sub 0	Float32T		ro	0	0..10000	1	0	mm

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
Ana_Min_In	Analog Ausgang Kennlinie Minimum Input (Messwert)									
	108	Sub 0	Float32T		rw	0	0..10000	1	0	mm
Ana_Min_Out	Analog Ausgang Kennlinie Minimum Output (% von 0..20mA)									
	109	Sub 0	Float32T		rw	4.000	0.000 to 20.000	1	0	mA
Ana_Max_In	Analog Ausgang Kennlinie Maximum Input (Messwert)									
	110	Sub 0	Float32T		rw	10000	0..10000	1	0	mm
Ana_Max_Out	Analog Ausgang Kennlinie Maximum Output (% von 0..20mA)									
	111	Sub 0	Float32T		rw	20.000	0.000 to 20.000	1	0	mA
Ana_Mode	Analog Output Modus									
	112	Sub 0	UIntegerT	8 Bit	rw	(0) 0 – 20 mA	(0) 0 – 20 mA (1) 0 – 20 mA, Error 22mA (2) 4 – 20 mA (3) 4 – 20 mA, Error 3.6mA (4) 4 – 20 mA, Error 22mA (5) 20 – 0 mA (6) 20 – 0 mA, Error 22mA (7) 20 – 4 mA (8) 20 – 4 mA, Error 3.6mA (9) 20 – 4 mA, Error 22mA			
Ana_Buttons	Set Analog Min/Max Inpoint to current measurement value									
	113	Sub 0	UIntegerT	8 Bit	wo		(0) Set Analog Minimum (1) Set Analog Maximum			

Variables

Name	Index	Subindex bitOffset	DataType	Length	Access Rights	Default	Value Range	Gradient	Offset	Unit
Measurement	Readout Measurement Data									
	114	Sub 0	RecordT	352 Bit	ro					
Lin. Measure + Zerooffset		Sub 7 bitOffs 128	Float32T			0.000	Float32T	1	0	mm
Signal		Sub 8 bitOffs 96	Float32T			0.000	Float32T	1	0	°C
Analog out		Sub 10 bitOffs 32	Float32T			0.000	Float32T	1	0	mA

ReportedLimit_Lower	Lower Reported Sensor Limit									
	120	Sub 0	Float32T		ro	0	Float32T	1	0	mm

ReportedLimit_Upper	Upper Reported Sensor Limit									
	121	Sub 0	Float32T		ro	10000	Float32T	1	0	mm

User_Buttons	Menu Buttons									
	123	Sub 0	UIntegerT	8 Bit	wo		(1) Reset min. Peak (2) Reset max. Peak (3) Reset min. and max. Peak (4) Teach Zero (uses current measurement)			

User_DAC_mA	Set Analog Out current (Test 0..22mA), not stored									
	124	Sub 0	Float32T		rw	0	0..22 (0 = disable)	1	0	mA

Errorcounter										
	126	Sub 0	RecordT	64 Bit	ro					
Transducer limit underrun		bitOffs 48	UInteger	16 Bit		0	0..65535			
Transducer limit overrun		bitOffs 32	UInteger	16 Bit		0	0..65535			

Variables

DisplayModus	Radar Display Mode									
	140	Sub 0	UIntegerT	8 Bit	rw	0	(0) Distance (2) Level			

Filter	Radar Level change rate filter									
	141	Sub 0	UIntegerT	8 Bit	rw	2	(0) Jumpy (1) Less than 1 m/s (2) Less than 0.5 m/s (3) Max. Peak			

EchoLost	Radar Echo Lost Behavior									
	142	Sub 0	UIntegerT	8 Bit	rw	0	(0) Hold (1) Zero (0 m) (2) Full Level (3) Empty Level			

Assembly_Offset	Radar Assembly Offset									
	143	Sub 0	Float32_t		rw	10	0..10.000	1	1	m

EmptyLevel	Radar Empty Level									
	144	Sub 0	Float32_t		rw	0	0..10.000	1	1	m

FullLevel	Radar Full Level									
	145	Sub 0	Float32_t		rw	10.000	0..10.000	1	1	m

MeasureInterval	Radar measure rate									
	146	Sub 0	UIntegerT	32 Bit	rw	100	50..10000	1	1	ms

Events

Code	Name	Type	Mode	Beschreibung
20480	Device hardware fault	Error	Appear/Disappear	Device hardware fault
35856	Process variable range over-run	Warning	Appear/Disappear	ADC-Werte über gültigem Messbereich
35888	Process variable range under-run	Warning	Appear/Disappear	ADC-Werte unter gültigem Messbereich
36346	Analog Out Error Low	Warning	Appear/Disappear	Analog error output set to 22mA
36347	Analog Out Error High	Warning	Appear/Disappear	Analog error output set to 3,8mA (4-20mA)
36348	Sensor Limit under-run	Warning	Appear/Disappear	Sensor valid range underrun
36349	Sensor Limit over-run	Warning	Appear/Disappear	Sensor valid range overrun
36350	Event A	Warning	Appear/Disappear	Test Event A
36351	Event B	Warning	Appear/Disappear	Test Event B