Digitization starts with the sensor

Feature overview IO-Link

	Object detection and distance measurement						
	Light barriers, optical sensors				Ultrasonic sensors		Inductive sensors
	O200	O300	O500	Series 14	Series 09	U500, UR18	IR06.D, IR08.D, IR12.D, IR18.D, IR30.D
Connection / transmission							
Device profile	Smart sensor profile						
IO-Link port type, power consumption (max.)	Class A, 24 V, max. 200 mA						
Coennection type	M8 4-Pin or cable 4-Pol, unshielded	M8 4-Pin or cable 4-Pol, unshielded	M12 4-Pin or cable 4-Pol, unshielded	M12 or M8 4-Pin or cable 4-Pol, unshielded	M8 4-Pin or cable 4-Pol, unshielded	M12 5-Pin, unshielded	M8 3-Pin oder M12 4-Pin, unshielded
IO-Link version	V 1.1	V 1.1	V 1.1	V 1.0	V 1.0	V 1.1	V 1.1
Baud rate	230.4 kbaud (COM 3)	38.4 kbaud (COM 2) 230.4 kbaud (COM 3)	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)	230.4 kbaud (COM 3)
Cycle time (min.)	0.6 ms	2.3 ms / 2.7 ms 0.6 ms (O300.DL)	2.3 ms / 2.7 ms	10 ms	20 ms	10 ms	0.6 ms
Process data length	32 bit	8 bit / 24 bit	8 bit / 24 bit	16 bit	12 bit	32 bit	32 bit
Cable length to master (max)	20 m						
SIO mode / DI / DQ mode	■	■	■	■	■	■	■
Dual Channel						■	
Transmission quality / security	Increased transmission reliability – up to 3 frame repetitions, active signalling of communication errors						
Identification							
IODD	Electronic device description in the automation system – prevents, among other things, connection of an incorrect sensor. Download in the IODD finder or at www.baumer.com with the product						
Identification date	Manufacturer, product image, product designation, serial number, hardware and firmware version as well as freely usable application designation						
Configuration							
Off-line parameterization	■	■	■	■	■	■	■
With SPS Engineering Tool	■	■	■	■	■	■	■
Stored parameters for sensor swap	■	■	■			■	■
Simple configuration changes	■	■	■	■	■	■	■
Find-me function							
Configurable parameters	Switching points or switching window for object detection or counter, output logic, switch-on / switch-off delay, measured value filter, SSC / output assignement, LED behavior, Teach possibilities	Switching point (mm / intensity), output logic, on / off delay, teaching possibilities, quality bit limit value, qTeach® locking	Switching point (mm / intensity), output logic, switch-on / switch-off delay, teaching possibilities, quality bit limit value, qTeach® locking	Switching point (mm), measuring range (FADx 14), output logic, on / off delay, teaching possibilities, quality bit limit value, qTeach® locking	Switching points or switching window for distance, measuring range, averaging, temperature compensation, teach-in lock	Switching points or switching windows for distance or counter, measuring range, sound beam, averaging, temperature compensation, output logic, switching hysteresis, input/ output logic, switch-off delay, output circuit, SSC / output assignment, LED behavior, teaching facilities	Switching points or switching window for distance, frequency or counter, measuring range, output logic, switching hysteresis, input / output logic, switch-off delay, output circuit, measured value filter, SSC / output assignment, LED behaviour, teaching options
Process data							
Process data, cyclically transmitted in real time MDC = Measuring values SSC = Switching signals	MDC: Signal reserve, intensity or counter SSC1: Detection SSC4: Counter	MDC: Distance (Ox00.Dx) SSC: Distance, sensitivity	MDC: Distance (Ox00.Dx) SSC: Distance, sensitivity	MDC: Distance (FADx 14) SSC: Distance	MDC: Distance SSC: Distance	MDC: Distance, counter SSC: Distance, counter	MDC: Distance, frequence, counter SSC1: Distance, frequence, counter SSC2: Distance, frequence, counter
Quality Bit (Process parameter)	Excess gain	Excess gain	Excess gain	Excess gain	Excess gain	Excess gain	
Alarm Bit (device defect)	■	■	■	■	■	■	■
Diagnosis							
Additional data, acylically retrievable	Switching cycles, device temperature, signal reserve	Signal reserve	Signal reserve	Signal reserve		Switching cycles, operating time, boot cycles, histograms of process data values and the operating voltage and device temperature	Switching cycles, operating time, boot cycles, histograms of process data values and the operating voltage and device temperature

Process instrumentation			
Flow sensors	**Level measurement**	**Pressure sensors**	**Conductivity sensor**
PF20	LBFI, LBFH	PP20H	AFIx

Connection / transmission

Device profile	Smart sensor profile			
IO-Link port type, power consumption (max.)	Class A, 24 V, max. 200 mA			
Coennection type	M12 4-Pin, unshielded	M12 4-Pin, unshielded	M12 5-Pin, unshielded	M12, 5-pin, unshielded, PG Gland
IO-Link version	V 1.1	V 1.1	V 1.1	V 1.1
Baud rate	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)	38.4 kbaud (COM 2)
Cycle time (min.)	3.2 ms	6.4 ms	2.9 ms	8.4 ms
Process data length	32 bit	16 bit	32 bit	128 bit
Cable length to master (max)	20 m			
SIO mode / DI / DQ mode	■	■	■	■
Dual Channel	■	■	■	■
Transmission quality / security	Increased transmission reliability – up to 3 frame repetitions, active signalling of communication errors			

Identification

IODD	Electronic device description in the automation system – prevents, among other things, connection of an incorrect sensor. Download in the IODD finder or at www.baumer.com with the product			
Identification date	Manufacturer, product image, product designation, serial number, hardware and firmware version as well as freely usable application designation			

Configuration

Off-line parameterization	■	■	■	■
With SPS Engineering Tool	■	■	■	■
Stored parameters for sensor swap	■	■	■	■
Simple configuration changes	■	■	■	■
Find-me function				
Configurable parameters	Output: Temperature or flow, analog or switching, unit, 2 switching points / switching window, switching hysteresis, on / off delay, filter, scaling, output circuit, output logic (NO / NC)	Output: 2 switching points / switching window, switching hysteresis, on / off delay, output circuit, output logic (NO / NC)	Switching point (SSC1), hysteresis, switching behaviour (NO / NC)	Measuring unit, switching parameters, analog outputs, measuring range, temperature compensation, reference temperature, temperature source, damping, sensor calibration to conductivity, concentration and temperature, calibration to media concentration

Process data

Process data, cyclically transmitted in real time MDC = Measuring values SSC = Switching signals	MDC: Flow rate, temperature SSC1: Flow rate, temperature SSC2: Flow rate, temperature	SSC1: Filling level 1 SSC2: Filling level 2	MDC: pressure measuring value or process temperature value	MDC: Analog output 1, analog output 2, media temperature, temperature unit, conductivity, concentration, measuring range SSC: conductivity, concentration or temperature
Quality Bit (process parameter)	Flow unstable	Media suitability		
Alarm Bit (device defect)			■	■

Diagnosis

Additional data, acylically retrievable			Temperature value pressure measuring cell (process temperature), zero point adjustment, serial number, part number, 3 tags, device status, pressure switching point, MDC selector (pressure/temperature), barometric pressure, current device temperature, CPU temperature, time since last power-up, current ambient pressure	Detailed device status (short-circuit, IO-Link maintenance, cable break, excess temperature)