

Description of the LR300 configuration and parameters

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The parameters in the table below can be set using the `SetSpecificSingleParameter` method in the software interface. To do this, the interface DLLs has to be integrated into the programming environment and the programming lines mentioned below must be executed.

All the examples relate to the Visual Studio 2010 programming environment and to the C# (C sharp) programming language.

Below is an example program for integrating and triggering a VSX sensor:

```
class Program
{
    static void Main(string[] args)
    {
        PF.Foundation.VsxFactory.PFVsxFacoryVCCustom sensor;
        sensor = new PF.Foundation.VsxFactory.PFVsxFacoryVCCustom();
        sensor.Connect("192.168.2.3", 50005);

        sensor.SetSpecificSingleParameter(1, "Command", "TriggerStart", "1");

        System.Threading.Thread.Sleep(1000);

        sensor.Disconnect();
    }
}
```

Config ID	Parameter ID	Value	Config Version		Description	From Firmware
			from	to		
General	OperatingMode	SingeConti	1		Continuous image capture, control, and transfer of data or images. Transfer is triggered with the "TriggerStart" command or hardware trigger and stopped with the "TriggerStop" command (or repeat of hardware trigger)	1200
		SingleFast	1		Continuous image capture (control active). Transfer of values only with software or hardware trigger.	1200
		SingleSnap	1		Image capture and transfer only on request. Automatic control requires several exposures.	1200
		MasterConti	1		Continuous image capture, control, and transfer of data or images. Transfer is triggered with the "TriggerStart" command or hardware trigger and stopped with the "TriggerStop" command (or repeat of hardware trigger) Device has master role and controls capturing on slave device	1200
		MasterFast	1		Continuous image capture (control active). Transfer of values only with software or hardware trigger. Device has master role and controls capturing on slave device	1200
		MasterSnap	1		Image capture and transfer only on request. Automatic control requires several exposures. Device has master role and controls capturing on slave device	1200
		Slave	1		Device has slave role and is controlled by master device.	1200
		SlaveFast	3		Continuous image capture (control active). Device has slave role and is controlled by master device.	
	GetLine	1/0	1		Transfer/do not transfer line data.	1200
	GetImage	1/0	1		Transfer/do not transfer image.	1200
	SyncMode	Synchron	1		Sensors are triggered at the same time (only in master/slave operation).	1200
		Alternate	1		Alternating operating mode (only in master/slave operation). Image capture occurs in succession so that the lasers do not interfere with one another.	1200

Config ID	Parameter ID	Value	Config Version		Description	From Firmware
			from	to		
		AlternateDelayed	3		Alternating operating mode (only in master/slave operation). Image capture occurs in succession so that the lasers do not interfere with one another.	3355
	SensorName	"IP-Address"	1		Name of the sensor that is shown in the display. Up to 12 characters are permitted. Umlauts and special characters are not shown.	1200
	EncoderMode	Direct	4		Default triggering without encoder	5201
		Off	4		External triggering is turned off (only software trigger enabled)	5201
		SectionPath	4		Evaluate 2 ranges	5201
		TriggerPath	4		Triggered each EncoderTriggerPath mm	5201
		TriggerTime	4		Triggers each EncoderTriggerTime ms	5201
	EncoderType	A	4		Evaluate only A encoder input	5201
		AB	4		Evaluate A and B encoder input (moving direction is detectable)	5201
	EncoderResolution	10.000	4		Resolution of the encoder in increments per mm	5201
	EncoderStart1	5.000	4		First start position in mm (count starts at trigger position)	5201
	EncoderLength1	10.000	4		Range of encoder counting	5201
	EncoderStart2	0.000	4		Second start position (count starts at trigger position)	5201
	EncoderLength2	0.000	4		Range of second encoder counting	5201
	EncoderTriggerPath	2.000	4		Distance between image shoots in mm	5201
	EncoderTriggerTime	1000.000	4		Time interval between two image shoots	5201
	EncoderRetriggerable	1/0	4		If 1, sensor resets encoder counting when it gets retriggered If 0, sensor ignores any trigger event until encoder counting is finished	5201
Camera	AutoExposure	1/0	1		Switch on/off the automatic control of the exposure time using the values set under Auto Exposure Settings.	1200
	ExposureMode	Auto	5		Automatic exposure control	8200
		Hdr	5		High dynamic range imaging	8200
		Manual	5		Manual exposure setup	8200
	CameraSpeed	1/0	1		Change between 90 Hz mode (1) and 60 Hz mode (0) for the camera.	1600
	BinningMode	Off	4		No Binning, 90Hz evaluation time	5290
		Row2x	4		Merge 2 image rows to one; 180Hz evaluation time	5290
		Row4x	4		Merge 4 image rows to one; 360Hz evaluation time	5290
	ExposureTime	8.90000	1		Manual input of the exposure time in ms	1200

Configuration Overview LR300

Config ID	Parameter ID	Value	Config Version		Description	From Firmware
			from	to		
					(AutoExposure must be deactivated).	
	MinExposureTime	0.02500	2		Minimal exposure time	2000
	MaxExposureTime	12.3000	2		Maximal exposure time	2000
	PixelCount	0 .. 100	1		Number of pixels (in relation to the total pixels in the image) that should be detected as a line. (Control of AutoExposure).	1200
	DesiredIntensity	0 .. 255	1		Minimum brightness of the line points.	1200
	LaserSelectionInfrared	Off	2		Measurement laser off	4240
		DelayOff	2		Measurement laser delayed off	4240
		Continuous	2		Measurement laser continuous	4240
		Pulse	2		Measurement laser pulsed	4240
	LaserSelectionRed	Off	2		Adjustment laser off	4240
		DelayOff	2		Adjustment laser delayed off	4240
		Continuous	2		Adjustment laser continuous	4240
		Pulse	2		Adjustment laser pulsed	4240
LineFinder1	LineMode	ModeHighConfidence	1		Use of the threshold value procedure and additional integration of the neighboring relationships of the adjacent points. As a result, measurement accuracy is increased and outliers are eliminated.	1400
		ModeMaximumPeak	1		Determination of the line by searching for the maximum brightness in the applicable line.	1400
		ModeStandard	1		Use of the threshold value procedure to find the line.	1200
	HighConfidenceFactor-Steepness	10	3		Future use	9700
	HighConfidenceFactor	1.50000	3		Future use	9700
	MeanFilter	1/0	1		Activate or deactivate mean filter	6000
	MinWidth	0..30	1		Defines the minimum line width in pixels.	5900
	MaxWidth	0..30	1		Defines the maximum line width in pixels.	5900
	Threshold	0..255	1		Defines the first threshold for the threshold value procedure (in grayscale values 0 ... 255). If there is no value above the threshold, the second threshold is used.	5900
	Threshold2	0..255	1		Second alternative threshold value (in grayscale values 0 ... 255), compare with threshold.	5900
	DynamicThreshold	1..100	3		Greylevel difference between background and line in %	8100

Config ID	Parameter ID	Value	Config Version		Description	From Firmware
			from	to		
	MaskWidth	0..30	1			
	ThresholdMax	0..255	1		Defines the threshold to restrict the left and right side of the maximum search with a threshold value. This increases the measurement accuracy.	5900
	ThresholdMax2	0..255	1		Minimum threshold to reproduce a valid measured value. If the value is set to 0, the algorithm always finds a measured value within the image.	5900
	NeighbourTreshold	-255..255	2		Defines the relative brightness of the pixels alongside the line to eliminate possible erroneous detections.	5900
	LinePosition	PositionBest	1		Selects the brightest point in the column as the line point	1400
		PositionFarest	1		Selects the farthest distant point in the column as the line point	1400
		PositionLargest	1		Selects the longest contour in the image	1400
		PositionNearest	1		Selects the closest point in the column as the line point	1400
	SegmentationDistance	-255..255	1		SegmentationDistance defines the maximum gap between two consecutive measured values so that these can be counted as a joint contour	5900
	SegmentationLength	0..480	1		Minimal length of segments	5900
Command	TriggerStart	1	1		Starts the triggering defined by OperatingMode	1200
	TriggerStop	1	1		Stops the triggering defined by OperatingMode.	1200
	LaserOn	1	1		Switches the laser on	1200
	LaserOff	1	1		Switches the laser off	1200
	ResetCounter	1	3		Reset image counter	2630
	PrepareStart	1	4		Prepare for next triggering	3353