

Application Note: AN-108

IOA-312

Getting started with PAM-190-P-IO using an IO-Link Master and adapter IOA-312



Electronics Hydraulicsmeets meetsHydraulics Electronics



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1 Preface

These instructions are intended for quick and easy start-up of the IO-Link communication interface with our adapter IOA-312. In this way, you can parameterize the device and perform function tests without a PLC. A USB IO-Link master with software from Turck was selected as an example. Alternatively, any IO-Link master and corresponding software can be used, but the individual steps for setup and operation will be different.

2 Hardware

The picture below shows a setup with all required components:

- PAM-190-P-IO Amplifier mounted on a solenoid
- Turck USB-2-IOL-0002 IO-Link Master (Turck order number: 6825482)
- IOA-312 IO-Link Class A to Class B Adapter
- Power supply with 24V and at least 2,5 Å (Included in the IOA-312 delivery).





3 Software

In the following the necessary steps are described to put a PAM-190-P-IO into operation with the Turck USB-2-IOL-0002 IO-Link Master.

1. Install the "Turck Software Manager":

https://www.turck.de/attachment/TurckSoftwareManager.zip The following software packages have to be selected and installed under IO-Link: "FDT Frame Application PACTware 5", "DTM for USB IO-Link Master 1.1" and "DTM for IODD Configurator" (Version for Windows10 or Windows7)

Turck Software Manager (V 1.2.1.362)				-	
Your Global Automation Partner		-	U	RC	*
Software Manager smart and easy software alignment					
DE EN Support & Service	local	online	delta	size	selection
- IO-Link					^
1 FDT Frame Application PACTware 4	4.1.0.50	4.1.0.50 🔴	\checkmark	49 MB	
1 FDT Frame Application PACTware 4 Compact	0	4.1.0.50 🔴	\bigcirc	5 MB	
FDT Frame Application PACTware 5	5.0.4020	5.0.4020 🔴	\checkmark	56 MB	
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1 DTM for IODD Configurator	• 3.10.0	3.12.0 🔴	\bigcirc	32 MB	
DTM for IODD Configurator (Compatible with Windows 7)	• 3.10.0	3.11.0 🔴	\bigcirc	32 MB	
DTM for USB IO-Link Master 1.0	0	1.4.2 🔴	ŵ	5 MB	
DTM for USB IO-Link Master 1.1	0 2.1.10	2.1.10 🔴	\checkmark	4 MB	
DTM for Profibus DPV1 Slave with integrated IO-Link Master	0	0.0.910 🔴	\bigcirc	31 MB	
DTM for fieldbus I/O systems BL20, BL67, BLcompact, FEN20, FXEN, FGEN and TBEN	1.0.2605	1.0.2805 🔴	ŝ	159 MB	□ ↓
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2. Launch the "IODD DTM Configurator":

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W.E.St. Elektronik Gmb	1 PAM-190-P-IO	900	1	V1.UZ	2019-11-15	1.10	West_Elektronik-PAM-190-P-IO-20191115-IODD1.12mi		IODD Sammlung hinzufügen (Zip)
									IODDs aus IODDfinder hinzufügen
									Loschen
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									Finstellungen
									Canateliangen
									0



3. Download the IODD file from the W.E.St. Elektronik website:

https://www.w-e-st.de/files/software/IODD-PAM-190.zip

Alternatively use the IODDfinder:



- 4. Connect the adapter USB-2-IOL-0002 with your PC
- 5. Start the program Turck BL Service PACTware:





6. Select the menu item "File/New, Add device":



7. Select the IO-Link USB Master 2.0 and confirm with "OK":

Device for					×
	All Devices (4/4 DTMs)				
····· 🗃 Device ····· 즟 Driver ····· 중 Gateway	Enter text to search			lear	
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	BL Service RS232	BL Service	Turck	DTM speci	1.0.0 / 2007-0
	🚭 HART Communication	HART	CodeWrig	not specifi	1.0.52 / 2015
	😌 IO-Link USB Master 2.0	IO-Link	IO-Link	not specifi	2.01.0010 / 2
Vendor Group Type Protocol					
Show unselected devices too					
	٠ []		•
All Devices	•				
			OK		Cancel



8. Click on the entry "IO-Link USB Master 2.0", afterwards you add a corresponding unit:



9. In the window "All devices\Device for", choose the PAM-190-P-IO... and confirm this with "OK".

Device for					×
□ <u>■</u> All Devices	All Devices (2/2 DTMs)				
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	PAM-190-P-IO IODD1.1	IO-Link	W.E.St. Ele	not specifi	V1.01 / 2019-
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All Devices	VendorDefault-DeviceDefault-20	100125-IODD1.0.1.xml	(05555(55555	5-10001.0.1	
			OK		Cancel



10. Establish a connection:

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Hans Turck GmbH & CO. KG					
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11. Click with the left mouse button in the project window on the PAM-190-P-IO IODD1.1 A parameter window opens:

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PAM-190-P-IO IODD1.1	□ □ 0 + 40	🕸 🗗 🖉 😼 🗗 🕷 🔳			Italog			
	Menu	Name	Value	Default value				
	- Identification	SENS	ON	✓ ON				
	- Process data	R_UP	100 ms	100 ms				
	Process data structure	R_DOWN	100 ms	100 ms				
	- Events	MIN	0	0				
	Connection info	MAX	10000	10000				
		TRIGGER	200	200				
		CURRENT	1000 mA	1000 mA				
		DAMPL	500	500				
		DFREQ	121 Hz	121 Hz				
		PWM	2604	~ 2604				
		ACC	ON	✓ ON				
		PPWM	7	7				
		IPWM	40	40				
		IO_BASE	10000	10000				
< >	Connected) Data set & Device			.::			
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12. Now you can change the parameter settings, e.g. "CURRENT" to 500. Type in the value "500" and confirm this with the Enter key.

Select the function key "Write different values to the device" above the value table. This transfers the changed parameters to the device and saves them permanently.

Use the "Read comparative data from device" function key to check the transfer of the data.

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	Events	MIN	0	0	
	Connection info	MAX	10000	10000	
		TRIGGER	200	200	
		CURRENT	500 mA	1000 mA	
		DAMPL	500	500	
		DFREQ	121 Hz	121 Hz	
		PWM	2604	~ 2604	
		ACC	ON	~ ON	
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		IPWM	40	40	
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13. In the left-hand menu, select the submenu item "Process data" and press the "Cyclical reading ..." button. This will cyclically read and display the current data of the device. Press it again to deactivate this mode:

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	Process data	Name	Value		<u>^</u>
	- Events	PDIN : Solenoid current	0,00000 mA		
	Info	PDIN : IDERROR	true ~		
	- Connection Into	PDIN : !IOLHTEMP	true ~		
		PDIN : !OPENSOL	true ~		
		PDIN : ISHORTSOL	true 🗸		
		PDIN : IAPIHTEMP	true 🗸		
		PDIN : !APILOW/WRN	true ~		~
		Output (from PLC)			
		Name	Value		
		PDOUT : ENABLE	false ~		
		PDOUT : Setpoint	0,00000		
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14. To control the device, change the control bit PDOUT: ENABLE to "true" and enter the desired setpoint at "PDOUT : Setpoint", e.g. the value 10000 for 100% of the rated current

Press the "Cyclical read ..." button. This displays the actual current (below "PDIN: Solenoid current").

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	Connection info	PDIN : !IOLHTEMP	true 🗸	
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4 Imprint

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