IO-Link Interface Guide

FNCIO-GUIDE
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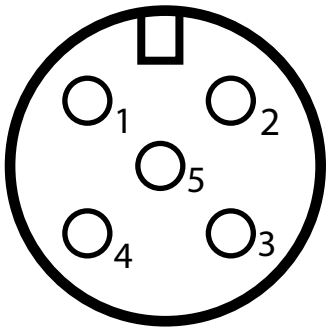
1. Device variant

FNC IOS58B6

- 58 mm housing diameter
- Clamping flange
- 6 mm shaft diameter
- M12 5 pin connector connection

FNC IOS58B8

- 58 mm housing diameter
- Clamping flange
- 8 mm shaft diameter
- M12 5 pin connector connection



FNC IOS58B10

- 58 mm housing diameter
- Clamping flange
- 10 mm shaft diameter
- M12 5 pin connector connection

Connection

Connector	Signals
Pin 1	L+
Pin 2	N.C.
Pin 3	L-
Pin 4	C/Q
Pin 5	N.C.

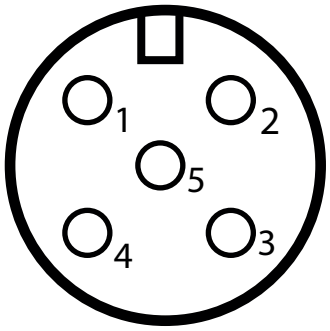
1. Device variant

FNC IOS58S6

- 58 mm housing diameter
- Servo flange
- 6 mm shaft diameter
- M12 5 pin connector connection

FNC IOS58S8

- 58 mm housing diameter
- Servo flange
- 8 mm shaft diameter
- M12 5 pin connector connection



FNC IOS58S10

- 58 mm housing diameter
- Servo flange
- 10 mm shaft diameter
- M12 5 pin connector connection

Connection

Connector	Signals
Pin 1	L+
Pin 2	N.C.
Pin 3	L-
Pin 4	C/Q
Pin 5	N.C.

2. Communication

Vendor ID	1629
Device ID	1
Bit rate	COM2
Minimum cycle time	2,3 ms
SIO mode supported	No
Block parameterization	Yes
Data storage	Yes
Supported profiles	Common Profile
Support of IO-Link 1.0	No

3. Parameter overview

Parameter	Index Subindex	Type	Factory Settings	Page
Vendor Name	16	StringT (19 Byte)	Fenac Mühendislik	8
Product Name	18	StringT (6 Byte)	FNCIO	8
Product Text	20	StringT (18 Byte)	IO-Link encoder basic line	8
Serial Number	21	StringT (16 Byte)		8
Hardware Revision	22	StringT (3 Byte)		8
Firmware Revision	23	StringT (8 Byte)		8
Application-specific tag	24	StringT (32 Byte)	***	8
Device Status	36	UIntegerT(8 Bit)	0 (Device is OK)	11
Detailed Device Status	37	OctetStringT (3 Byte) [3]	0x00,0x00,0x00	11
Process Data Input	40	RecordT (32 Bit)		9
Operating Hours	75	UIntegerT(16 Bit)		11
Reset pin low state reset count	76	UIntegerT(16 Bit)		12
Window WatchDog reset count	77	UIntegerT(16 Bit)		12
Independent Window Watch-dog reset count	78	UIntegerT(16 Bit)		12
Software reset count	79	UIntegerT(16 Bit)		12
Low Power security reset count	80	UIntegerT(16 Bit)		12
Option Byte loader reset count	81	UIntegerT(16 Bit)		12
Brown-Out reset count	82	UIntegerT(16 Bit)		12
Direction	64	UIntegerT(8 Bit)	0 (cw / A before B)	10
EncOut	65	UIntegerT(8 Bit)	0xFF(HTL)	10
Resolution	66	UIntegerT(16 Bit)	1024	10

4. System Commands

System Commands	Text	Description
1	Upload Start	Start block parameter upload
2	Upload End	End block parameter upload
3	Download Start	Start block parameter download
4	Download End	Stop block parameter download
5	Store	Finalize block parameterization and start Data Storage
6	Break	Cancel block parameterization
130	Restore factory set-tings	

5. Identification

Vendor Name	Index 16	Subindex 0	StringT (19 Byte)	ReadOnly
The vendor name that is assigned to a Vendor ID.				
Factory settting	Fenac Mühendislik San. Tic. Ltd. Şti.			

Product Name	Index 18	Subindex 0	StringT (6 Byte)	ReadOnly
Complete product name.				

Product Text	Index 20	Subindex 0	StringT (18 Byte)	ReadOnly
Additional product information for the device.				
Factory settting	IO-Link encoder basic line			

Serial Number	Index 21	Subindex 0	StringT (16 Byte)	ReadOnly
Unique, vendor-specific identifier of the individual device.				

Hardware Revision	Index 22	Subindex 0	StringT (3 Byte)	ReadOnly
Unique, vendor-specific identifier of the hardware revision of the individual device.				

Firmware Revision	Index 23	Subindex 0	StringT (8 Byte)	ReadOnly
Unique, vendor-specific identifier of the firmware revision of the individual device.				

Application-specific Tag	Index 24	Subindex 0	StringT (32 Byte)	ReadOnly
Possibility to mark a device with user-or application-specific information.				
Factory settting	***			

6. Observation

6.1. Process Data Input/Output

Process data input	RecordT (32 Bit)
Counter	UInteger (32 Bit)
Singleturn counter value	

31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

7. Parameter

7.1. Encoder configuration

Direction	Index 64	Subindex 0	UIntegerT (8 Bit)	ReadWrite
Counting direction				
Factory setting	0x00	(cw / A leading B)		
Value range	0x00	(cw / A leading B)		
	0xFF	(cww/ B leading A)		

EncOut	Index 65	Subindex 0	UIntegerT (8 Bit)	ReadWrite
EncoderOUT				
Factory setting	0x00	(TTL)		
Value range	0x00	(TTL)		
	0xFF	(HTL)		

Resolution	Index 66	Subindex 0	UIntegerT (16 Bit)	ReadWrite
Encoder resolution, setting of the steps within one revolution				
Factory setting	1024			
Value range	(1 to 65535)			

8. Diagnosis

8.1. Diagnosis

Device Status	Index 36	Subindex 0	UIntegerT (8 Bit)	ReadOnly
Indicator for the current device condition and diagnosis state.				
Factory setting	0	(Device is OK)		
Value range	0	(Device is OK)		
	1	(Maintenance required)		
	2	(Out of specification)		
	3	(Functional check)		
	4	(Failure)		
	(5 to 255) (Reserved)			

Detailed Device Status	Index 37	Subindex 0	OctetStringT (3 byte) [3]	ReadOnly
List of all currently pending events in the device.				
Factory settting	0x00,0x00,0x00			

Operating Hours	Index 75	Subindex 0	UIntegerT (16 bit)	ReadOnly
Counter of the operating hours since delivery.				
Value range	(0 to 65535)*100			

8. Diagnosis

Reset pin low state reset count	Index 76	Subindex 0	UIntegerT (16 bit)	ReadOnly
Reset pin low state reset count				
Value range	(0 to 65535)			

Window WatchDog reset count	Index 77	Subindex 0	UIntegerT (16 bit)	ReadOnly
Window WatchDog reset count				
Value range	(0 to 65535)			

Independent Window Watchdog reset count	Index 78	Subindex 0	UIntegerT (16 bit)	ReadOnly
Independent Window Watchdog reset count				
Value range	(0 to 65535)			

Software reset count	Index 79	Subindex 0	UIntegerT (16 bit)	ReadOnly
Software reset count				
Value range	(0 to 65535)			

Low power security reset count	Index 80	Subindex 0	UIntegerT (16 bit)	ReadOnly
Low power security reset count				
Value range	(0 to 65535)			

Option Byte loader reset count	Index 81	Subindex 0	UIntegerT (16 bit)	ReadOnly
Option Byte loader reset count				
Value range	(0 to 65535)			

Brown-Out reset count	Index 82	Subindex 0	UIntegerT (16 bit)	ReadOnly
Brown-Out reset count				
Value range	(0 to 65535)			

9. Events

Code	Device Status	PQ*	Class	Name	Description
0x8C1035856d	2 (Out of specification)	Valid	Warning	Process variable range overrrun	Process data uncertain
0x8DFR3635d	1 (Maintenance required)	Valid	Warning	Test Event 1. Device status=1 (Maintenance required)	Event appears by setting index 2 to value 240, Event dissappears by setting index 2 to value 241
0x8DFF36351d	1 (Maintenance required)	Valid	Warning	Test Event 2. Device status=1 (Maintenance required)	Event appears by setting index 2 to value 242, Event dissappears by setting index 2 to value 243

10. Error Types

Code	Name	Description
0x8000 32768d	Device application error - no details	Service was denied by the technology-specific application. No detailed root-cause information is available.
0x8011 32785d	Index not available	Read or write access attempt to a non-existing index.
0x8012 32786d	Subindex not available	Read or write access attempt to a non-existing subindex of an existing index.
0x8020 32800d	Service temporarily not available	Parameter not accessible due to the current state of the technology-specific application.
0x8021 32801d	Service temporarily unavailable local control	Parameter not accessible. The device is currently in an ongoing, locally controlled operation.
0x8022 32802d	Service temporarily unavailable - device control	Parameter not accessible. The technology-specific application is currently in a remotely triggered operation.
0x8023 32803d	Access denied	Write access to a read-only parameter or read access to write-only parameter.
0x8030 32816d	Parameter value out of range	Written parameter value is outside of the permitted value range.
0x8031 32817d	Parameter value above limit	Written parameter value is above its specified value range.
0x8032 32818d	Parameter value below limit	Written parameter value is below its specified value range
0x8033 32819d	Parameter length overrun	Written parameter is longer than specified.
0x8034 32820d	Parameter length underrun	Written parameter is shorter than specified.
0x8035 32821d	Function unavailable	Written command is not supported by the technology-specific application
0x8036 32822d	Function temporarily unavailable	Written command is unavailable due to the current state of the technology-specific application.
0x8040 32832d	Invalid parameter set	Written single parameter value collides with other existing parameter settings.
0x8041 32833d	Inconsistent parameter set	Parameter set inconsistencies at the end of block parameter transfer. Device plausibility check failed.
0x8082 32898d	Application not ready	Read or write access denied. The technology-specific application is temporarily unavailable.