AXL F DO32/1 1F

Axioline F, digital output module, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor

Data sheet
8124_en_03

1 Description

The module is designed for use within an Axioline F station. It is used to output digital signals.
The outputs are protected against short circuit and overload.

Features

- 32 digital outputs
- 24 V DC, 500 mA
- Connection of actuators in 1-conductor technology
- Minimum update time of < 100 µs
- Device rating plate stored

Valid for hardware Version 05, firmware Version 1.00 or later.

The deviating behavior of the modules with an earlier hardware revision is documented in the corresponding points.

This data sheet is only valid in association with the UM EN AXL F SYS INST user manual.

Make sure you always use the latest documentation.
It can be downloaded at: phoenixcontact.net/product/2688051

2 Table of contents

3 Ordering data

Description	Type	Order No.	Pcs./Pkt.
Axioline F, Digital output module, Digital outputs: 32, 24 V DC, 500 mA, connection method: 1-conductor, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connectors	AXL F DO32/1 1F	2688051	1

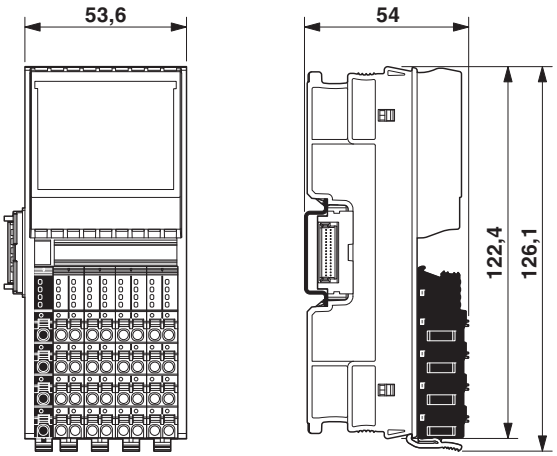
Accessories	Type	Order No.	Pcs./Pkt.
Axioline F bus base module for housing type F (Replacement item)	AXL F BS F	2688129	5
Zack marker strip for Axioline F (device labeling), in 2 x 20.3 mm pitch, unprinted, 25-section, for individual labeling with B-STIFT 0.8, X-PEN, or CMS-P1-PLOTTER (Marking)	ZB 20,3 AXL UNPRINTED	0829579	25
Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 10.15 mm, lettering field size: 4 of 10.15 x 5 mm and 1 of 5.8 x 5 mm, Number of individual labels: 50 (Marking)	ZBF 10/5,8 AXL UNPRINTED	0829580	50
Insert label, for the Axioline F series from Phoenix Contact, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, THERMOMARK ROLL X1, THERMOMARK ROLL 2.0, THERMOMARK ROLL, mounting type: snapped into marker carrier, lettering field size: 35 x 46 mm, Number of individual labels: 500 (Marking)	EMT (35X46)R	0801604	1
V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: plusschaltend (Connector/ Adapter)	PLC-V8/FLK14/OUT	2295554	1
V8 adapter for 8 x PLC-INTERFACE (14 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: plusschaltend (Connector/ Adapter)	PLC-V8L/FLK14/OUT	2299660	1

Accessories	Type	Order No.	Pcs./Pkt.
VARIOFACE module, with screw connection and flat-ribbon cable connector, for mounting on NS 35 rails, with pin strip and short and long locking latches for socket strips, 20-pos.	VIP-2/SC/FLK20	2315049	1
VARIOFACE module, with push-in connections and flat-ribbon cable connector, for mounting on NS 35 rails, with pin strip and short and long locking latches for socket strips, 20-pos.	VIP-2/PT/FLK20	2903790	1
VARIOFACE SLIM LINE, with screw connection and flat-ribbon cable connector, for assembly at a right angle on NS 35/7.5, 20 positions	UM 25-FLK20/FRONT/Q	2959515	1

Documentation	Type	Order No.	Pcs./Pkt.
User manual, English, Axioline F: System and installation	UM EN AXL F SYS INST	-	-
User manual, English, Axioline F: Diagnostic registers, and error messages	UM EN AXL F SYS DIAG	-	-

4 Technical data

Dimensions (nominal sizes in mm)



Width	53.6 mm
Height	126.1 mm
Depth	54 mm
Note on dimensions	The depth is valid when a TH 35-7,5 DIN rail is used (according to EN 60715).

General data	
Color	traffic grey A RAL 7042
Weight	191 g (with connectors and bus base module)
Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Degree of protection	IP20
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II (IEC 60664-1, EN 60664-1)
Degree of pollution	2 (IEC 60664-1, EN 60664-1)
Mounting position	any (no temperature derating)

Connection data: Axioline F connector	
Connection method	Push-in connection
Conductor cross section, rigid	0.2 mm² ... 1.5 mm²
Conductor cross section, flexible	0.2 mm² ... 1.5 mm²
Conductor cross section [AWG]	24 ... 16
Stripping length	8 mm

Please observe the information provided on conductor cross sections in the “Axioline F: system and installation” user manual.

Interface: Axioline F local bus	
Number of interfaces	2
Connection method	Bus base module
Transmission speed	100 Mbps

Axioline F local bus supply (U_{Bus})	
Supply voltage	5 V DC (via bus base module)
Current consumption	max. 120 mA (up to HW 04) max. 60 mA (as of HW 05)
Power consumption	max. 600 mW (up to HW 04) max. 300 mW (as of HW 05)

Supply for digital output modules (U_O)	
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current consumption	min. 35 mA (without actuators) max. 8 A (up to HW 04, provide external protection) max. 16 A (as of HW 05, provide external protection; if the total current of 8 A is exceeded, connect the supply at the power connector parallel via both terminal points.)
Power consumption	typ. 800 mW (without actuators) max. 240 W (up to HW 04, of which 1.5 W constitute internal losses) max. 480 W (as of HW 05, of which max. 2.4 W constitute internal losses)
Surge protection	electronic (35 V, 0.5 s)
Reverse polarity protection	parallel diode; with external 5 A fuse (only for commissioning)
Protection	max. 8 A (up to HW 04, protection against polarity reversal up to 5 A) max. 16 A (form HW 05, protection against polarity reversal up to 5 A)

NOTE: Damage to the electronics

Provide external protection for the module to ensure reverse polarity protection. If you use a fuse, the power supply unit must be capable of supplying four times the nominal current of the fuse. This ensures that the fuse trips reliably in the event of a fault.

Up to hardware revision 04:

When using the module for the first time, protect it with a 5 A fuse. When all modules in the system are correctly connected, the 5 A fuse can be replaced with an 8 A fuse. After that, you can load the module up to 8 A.

Loads over 8 A are not permitted.

As of hardware revision 05:

When using the module for the first time, protect it with a 5 A fuse. When all modules in the system are correctly connected, the 5 A fuse can be replaced with a 16 A fuse. After that, you can load the module up to 16 A.

Loads over 16 A are not permitted.

Digital outputs	
Number of outputs	32
Connection method	Push-in connection
Connection technology	1-conductor
Nominal output voltage	24 V DC
Maximum output current per channel	500 mA
Maximum output current per device	8 A (up to HW 04, provide external protection) 16 A (as of HW 05, provide external protection)
Nominal load, ohmic	max. 12 W (48 Ω, with nominal voltage)
Nominal load, inductive	max. 12 VA (1.2 H, 48 Ω, with nominal voltage)
Nominal load, lamp	max. 12 W (at nominal voltage)
Signal delay	max. 150 µs (when switched on) max. 200 µs (during switching off with ohmic nominal load)

Digital outputs	
Switching frequency	max. 5500 per second (with ohmic load) max. 1 per second (with inductive load) max. 16 per second (with nominal lamp load)
Load min.	10 kΩ
Energy consumption	see diagram
Limitation of the voltage induced on circuit interruption	-32.8 V ... -15 V
Output voltage when switched off	max. 1 V
Output current when switched off	max. 300 µA
Behavior with overload	Shutdown with automatic restart
Behavior with inductive overload	Output can be destroyed
Reverse voltage resistance to short pulses	limited protection up to 0.5 A for 1 s

NOTE: Damage to the electronics

If there is a faulty external voltage (reverse voltage) at one of the outputs, the output may be destroyed. This may cause unintentional setting of further outputs.

Overcurrent shut-down	as of 0.7 A
Output current with ground connection interrupt when switched off	< 1 mA
Process data update	< 100 µs
Short-circuit protection, overload protection of the outputs	electronic

Input and output address area	
Input address area	0 Byte
Output address area	4 Byte

Configuration and parameter data in a PROFIBUS system	
Required parameter data	1 Byte
Required configuration data	6 Byte

Electrical isolation/isolation of the voltage areas	
Test section	**Test voltage**
5 V supply of the local bus (U_{Bus}) / 24 V supply (I/Os)	500 V AC, 50 Hz, 1 min.
5 V supply of the local bus (U_{Bus}) / functional ground	500 V AC, 50 Hz, 1 min.
24 V supply (I/O) / functional ground	500 V AC, 50 Hz, 1 min.

Mechanical tests	
Vibration resistance in acc. with EN 60068-2-6/ IEC 60068-2-6	5g
Shock in acc. with EN 60068-2-27/IEC 60068-2-27	30g
Continuous shock according to EN 60068-2-27/ IEC 60068-2-27	10g

Conformance with EMC Directive 2014/30/EU	
Noise immunity test in accordance with EN 61000-6-2	
Electrostatic discharge (ESD) EN 61000-4-2/ IEC 61000-4-2	Criterion B, 6 kV contact discharge, 8 kV air discharge
Electromagnetic fields EN 61000-4-3/IEC 61000-4-3	Criterion A, Field intensity: 10 V/m
Fast transients (burst) EN 61000-4-4/IEC 61000-4-4	Criterion B, 2 kV
Transient overvoltage (surge) EN 61000-4-5/ IEC 61000-4-5	Criterion B, DC supply lines: ±0.5 kV/±0.5 kV (symmetrical/ asymmetrical)
Conducted interference EN 61000-4-6/IEC 61000-4-6	Criterion A, Test voltage 10 V
Noise emission test according to EN 61000-6-3	Class B

Approvals

For the latest approvals, please visit phoenixcontact.net/products.

5 Maximum outputs power consumption when inductive loads are switched off

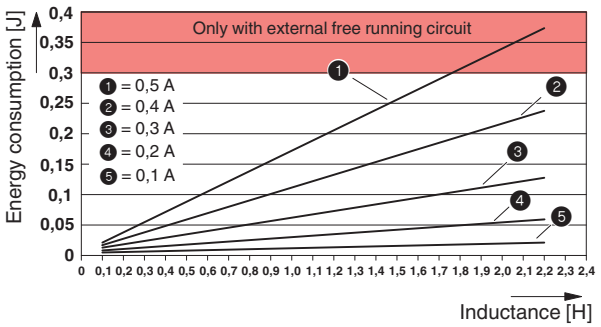
NOTE: Damage to the electronics

When you use an external freewheel limit, the free-wheeling voltage to a maximum of -15 V.

The value **must** be above -15 V, so -12 V, for example.

The external freewheel limit has no function with a higher negative voltage.

Figure 1 Maximum outputs power consumption when inductive loads are switched off

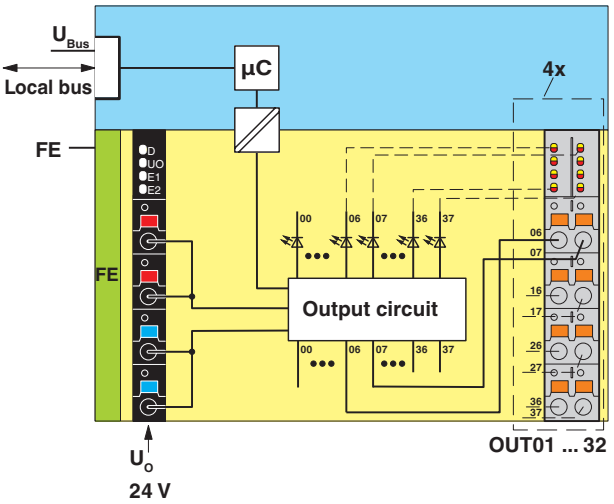


The specifications in the diagram refer to a maximum switching frequency of 1 Hz.

The diagram displays the maximum amount of energy that may be fed back into the the corresponding output groups (outputs 1 to 8, 9 to 16, 17 to 24, 25 to 32) for each switch off procedure during switching off of an inductive load without external freewheeling circuit.
The current data refers to the ohmic DC voltage component of the inductive load.

6 Internal circuit diagram

Figure 2 Internal wiring of the terminal points



Key:

Local bus	Axioline F local bus (hereinafter referred to as local bus)
FE	Functional ground
µC	Microcontroller
	Electrical isolation
Output circuit	Output configuration
	LED
	Electrically isolated areas

7 For your safety

7.1 Intended use

Use the Axioline F modules exclusively in accordance with the specifications in the accompanying data sheet and the “Axioline F: System and Installation” user manual.

7.2 Qualification of users

The use of products described in this data sheet is oriented exclusively to electrically skilled persons or persons instructed by them. The users must be familiar with the relevant safety concepts of automation technology as well as applicable standards and other regulations.

7.3 Electrical safety

WARNING: loss of electrical safety

If used incorrectly, device safety may be impaired.

The instructions given in this data sheet as well as the UM EN AXL F SYS INST user manual must be observed during installation, startup, and operation.

7.4 Installation

Only install the Axioline F modules in a control cabinet or junction box.

The enclosure must meet the requirements regarding the protection against spread of fire according to the following standards:

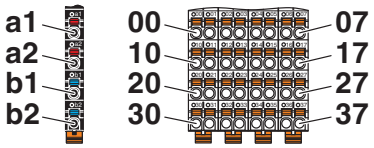
– EN 61010-1/IEC 61010-1
– UL 61010-1 (for applications with UL approval)

8 UL note

– Use copper conductor only.

9 Terminal point assignment

Figure 3 Terminal point assignment



Terminal point	Color	Assignment	
Supply voltage input			
a1, a2	Red	24 V DC (U_O)	Supply for digital output modules (bridged internally)
b1, b2	Blue	GND	Reference potential of the supply voltage (bridged internally)
Digital outputs			
00 ... 07	Orange	OUT01 ... OUT08	Digital outputs 1 ... 8
10 ... 17	Orange	OUT09 ... OUT16	Digital outputs 9 ... 16
20 ... 27	Orange	OUT17 ... OUT24	Digital outputs 17 ... 24
30 ... 37	Orange	OUT25 ... OUT32	Digital outputs 25 ... 32

Take the contacts' maximum load capacity of 8 A into account!

From HW 05:

If the supply voltage U_O is supplied in parallel via both connections a1 and a2 as well as b1 and b2, the module can be loaded with up to a maximum of 16 A.

10 Connection example

Figure 4 Parallel supply of the supply voltage

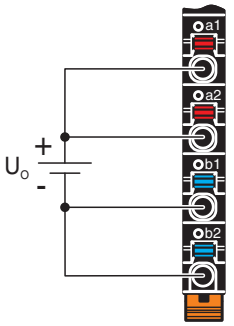
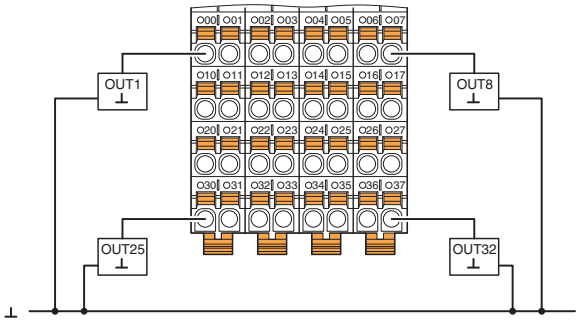


Figure 5 Connection in 1-conductor technology

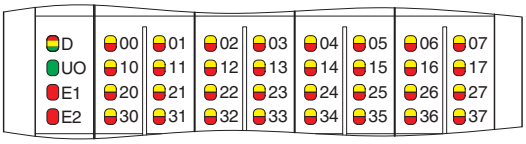


Make sure that the GND of the actuators and the GND for U_O have the same potential!

11 Local diagnostic and status indicators

As of hardware revision 05

Figure 6 Local diagnostic and status indicators



Channel errors are errors that can be associated with a channel.
I/O errors are errors that affect the entire module.

Designation	Color	Meaning	State	Description
D	Red/ yellow/ green	Diagnostics of local bus communication		
		Run	Green on	The device is ready for operation, communication within the station is OK. All data is valid. An error has not occurred.
		Active	Green flashing	The device is ready to operate, communication within the station is OK. The data is **not** valid. The controller or superordinate network is not delivering valid data. There is no error on the module.
		Device application not active	Green/ yellow flashing	The device is ready for operation, communication within the station is OK. Output data **cannot** be outputted and/or input data **cannot** be read. There is a fault on the periphery side of the module..
		Ready	Yellow on	The device is ready for operation but did not detect a valid cycle after power-up.
		Connected	Yellow flashing	The device is not (yet) part of the active configuration.
		Reset	Red on	The device is ready for operation but has lost the connection to the bus head.
		Not connected	Red flashing	The device is ready for operation but there is no connection to the previously existing device.
		Power down	Off	Device is in (power) reset.
U_O	Green	U_{Output}	On	Supply for digital output modules present.
			Off	Supply for digital output modules is not present.
E1	Red	I/O error	On	I/O error present.
			Off	No I/O error.
E2	Red	Channel error	On	Channel error present.
			Off	Channel error not present.
00 ... 37	Red/ yellow	Diagnostics / status of the output	Red on	Short-circuit/overload of the output.
			Yellow on	Output is set.
			Off	No error, output is not set.

Deviating behavior up to hardware revision 04

The LED E2 is not present.

Designation	Color	Meaning	State	Description
E1	Red	I/O error	On	Breakdown or overload/short-circuit of an output.
			Off	No I/O error.

12 Process data

The process data is mapped in Motorola format (Big Endian).

OUT process data

Byte	0							
Bit	7	6	5	4	3	2	1	0
Signal	OUT 08	OUT 07	OUT 06	OUT 05	OUT 04	OUT 03	OUT 02	OUT 01
Terminal point	07	06	05	04	03	02	01	00

Byte	1							
Bit	7	6	5	4	3	2	1	0
Signal	OUT 16	OUT 15	OUT 14	OUT 13	OUT 12	OUT 11	OUT 10	OUT 09
Terminal point	17	16	15	14	13	12	11	10

Byte	2							
Bit	7	6	5	4	3	2	1	0
Signal	OUT 24	OUT 23	OUT 22	OUT 21	OUT 20	OUT 19	OUT 18	OUT 17
Terminal point	27	26	25	24	23	22	21	20

Byte	3							
Bit	7	6	5	4	3	2	1	0
Signal	OUT 32	OUT 31	OUT 30	OUT 29	OUT 28	OUT 27	OUT 26	OUT 25
Terminal point	37	36	35	34	33	32	31	30

13 Parameter, diagnostics and information (PDI)

Parameter and diagnostic data as well as other information is transmitted as objects via the PDI channel of the Axioline F station.

The standard and application objects stored in the module are described in the following section.

The following applies to all tables below:

Please refer to the UM EN AXL F SYS INST for an explanation of the data types.

Abbreviation	Meaning
A	Number of elements
L	Length of the elements in bytes
R	Read
W	Write

Each visible string is terminated with a null terminator (00_{hex}). The length of a visible-string-type element is therefore at least one byte larger than the number of user data items.
If the number of user data items plus null terminator is smaller than the specified length of the element, the visible string will be populated with a null character (00_{hex}).

For detailed information on PDI objects, please refer to the UM EN AXL F SYS INST user manual.

14 Standard objects

14.1 Objects for identification (device rating plate)

As of hardware revision 05

Index (hex)	Object name	Data type	A	L	Rights	Meaning	Contents
Manufacturer							
0001	VendorName	Visible String	1	32	R	Vendor name	Phoenix Contact
0002	VendorID	Visible String	1	7	R	Vendor ID	00A045
0003	VendorText	Visible String	1	58	R	Vendor text	Components and systems for industrial automation
0012	VendorURL	Visible String	1	58	R	Vendor URL	www.phoenixcontact.com
Module - general							
0004	DeviceFamily	Visible String	1	16	R	Device family	I/O digital OUT
0006	ProductFamily	Visible String	1	32	R	Product family	AXL F
000E	CommProfile	Visible String	1	4	R	Communication profile	633
000F	DeviceProfile	Visible String	1	5	R	Device profile	0010
0011	ProfileVersion	Record of Visible Strings	2	11; 21	R	Profile version	2011-12-07; Basic - Profile V2.0
0017	Language	Record of Visible Strings	2	6; 8	R	Language	en-us; English
Module - special							
0005	Capabilities	Visible String	1	8	R	Capabilities	Nothing
0007	ProductName	Visible String	1	32	R	Product name	AXL F DO32/1 1F
0008	SerialNo	Visible String	1	22	R	Serial number	e. g., 1234512345
0009	ProductText	Visible String	1	58	R	Product text	32 digital outputs
000A	OrderNumber	Visible String	1	32	R	Order No.	2688051
000B	HardwareVersion	Record of Visible Strings	2	11; 11	R	Hardware version	e. g., 2011-02-04; 00
000C	FirmwareVersion	Record of Visible Strings	2	11; 11	R	Firmware version	e.g., 2017-12-31; 1.00
000D	PChVersion	Record of Visible Strings	2	11; 6	R	PDI version	e. g., 2010-06-21; V1.00
0037	DeviceType	Octet string	1	8	R	Device type	00 40 00 04 00 00 00 $D3_{hex}$
003A	VersionCount	Array of UINT16	4	4 * 2	R	Version counter	e.g., 0007 0001 0001 0001_{hex}
Use of the device							
0014	Location	Visible String	1	59	R/W	Location	Can be completed by the user.
0015	EquipmentIdent	Visible String	1	59	R/W	Equipment identifier	Can be completed by the user.
0016	ApplDeviceAddr	UINT16	1	2	R/W	Application-specific device address	Can be completed by the user.

Deviating behavior up to hardware revision 04

Index (hex)	Object name	Data type	A	L	Rights	Meaning	Contents
Manufacturer							
0001	VendorName	Visible String	1	16	R	Vendor name	Phoenix Contact
0003	VendorText	Visible String	1	49	R	Vendor text	Components and systems for industrial automation
0012	VendorURL	Visible String	1	23	R	Vendor URL	www.phoenixcontact.com
Module - general							
0006	ProductFamily	Visible String	1	6	R	Product family	AXL F
0011	ProfileVersion	Record of Visible Strings	2	11; 20	R	Profile version	2011-12-07; Basis - Profil V2.0
003A	VersionCount	UINT16	4	4 * 2	R	Version counter	e.g., 0007 0001 0000 0000_{hex}
Module - special							
0007	ProductName	Visible String	1	16	R	Product name	AXL F DO32/1 1F
0008	SerialNo	Visible String	1	11	R	Serial number	e. g., 1234512345
0009	ProductText	Visible String	1	19	R	Product text	32 digital outputs
000A	OrderNumber	Visible String	1	8	R	Order No.	2688051
000B	HardwareVersion	Record of Visible Strings	2	11; 3	R	Hardware version	e. g., 2011-02-04; 00
000C	FirmwareVersion	Record of Visible Strings	2	11; 3	R	Firmware version	0000-00-00; --

14.2 Miscellaneous standard objects

Index (hex)	Object name	Data type	A	L	Rights	Meaning/contents	
Diagnostics objects							
0018	DiagState	Record	6	58	R	Diagnostic state	*
Objects for process data management							
0026	PDOUT	Octet string	1	4	R	Output process data	*
003B	PDIN_Descr	Array of Records	3	8; 2; 2	R	Description of the IN process data	
003C	PDOUT_Descr	Array of Records	3	8; 2; 2	R	Description of the output process data	

The objects identified with * in the last column are described in more detail in the following sections.

The description of the other objects is to be found in the user manual UM EN AXL F SYS INST.

The objects $003B_{hex}$ and $003C_{hex}$ are only applicable to tools.

14.3 Diagnostics state (0018_{hex}: DiagState)

This object is used for a structured message of an error.

As of hardware revision 05

0018_{hex}: Diagnostics state (read)					
Subindex	**Data type**	**Length in bytes**	**Meaning**	**Contents**	
0	Record	58	Diagnostic state	Complete diagnostics information	
1	UINT16	2	Error number	0 ... 65535_{dec}	
2	UINT8	1	Priority	00_{hex}	No error
				01_{hex}	Error
				02_{hex}	Warning
				81_{hex}	Error removed
				82_{hex}	Warning eliminated
3	UINT8	1	Channel/group/module	00_{hex}	No error
				01_{hex}	Channel 1 (OUT01)
				...	...
				20_{hex}	Channel 32 (OUT32)
				FF_{hex}	Entire device
4	UINT16	2	Error code	See table below	
5	UINT8	1	More follows	00_{hex}	
6	Visible String	51	Text	See table below	

The message with priority 81_{hex} or 82_{hex} is a one-off, internal message to the bus coupler. The bus coupler transfers this error message to the error mechanisms of the higher-level system.

After all errors have been eliminated, it is automatically reset.

Error and status of the local diagnostics and status indicators

Subindex	**2**	**3**	**4**	**6**					
Error	**Priority**	**Channel/ group/ module**	**Error code**	**Text**	**LED**				
	hex	**hex**	**hex**		**D**	**U_O**	**E1**	**E2**	**xx**
No error	00	00	0000	Status OK	◐	●	○	○	○
Short-circuit/overload of an output	02	##	2344	Overload / short circuit DO##, terminal point $$	◐	●	○	◑	◑
Failure of the supply for digital output modules (U_O) (Actuator supply not present)	01	FF	3422	Missing I/O supply UO, terminal point a1/a2, b1/b2	☼	○	◑	○	○

##	Channel number	xx LED	Diagnostics of the output
$$	Terminal point number	xx	00 ... 07, 10 ... 17, 20 ... 27, 30 ... 37
○	Off	◐	Green on
●	On	◑	Red on
		☼	Green/yellow flashing

"Actuator supply not present" is then signaled using object 0018_{hex} and LED E1 if you have configured a setting stipulating that the error should be sent to the controller (see object $FF8F_{hex}$).

Deviating behavior up to hardware revision 04

0018_{hex}: Diagnostics state (read)					
Subindex	**Data type**	**Length in bytes**	**Meaning**	**Contents**	
0	Record	8	Diagnostic state	Complete diagnostics information	
1	UINT16	2	Error number	0 ... 65535_{dec}	
2	UINT8	1	Priority	00_{hex}	No error
				01_{hex}	Error
				02_{hex}	Warning
				81_{hex}	Error removed
				82_{hex}	Warning eliminated
3	UINT8	1	Channel/group/module	00_{hex}	No error
				FF_{hex}	Entire device
4	UINT16	2	Error code	See table below	
5	UINT8	1	More follows	00_{hex}	
6	Visible String	1	Text	00_{hex}	

Error and status of the local diagnostics and status indicators

Subindex	**2**	**3**	**4**				
Error	**Priority**	**Channel/group/module**	**Error code**	**LED**			
	hex	**hex**	**hex**	**D**	**U_O**	**E1**	**xx**
No error	00	00	0000	◐	●	○	○
Short-circuit/overload of an output	02	00	2344	◐	●	◑	◑
Failure of the supply for digital output modules (U_O) (Actuator supply not present)	01	FF	3422	◐ or ☼	○	○	○

xx LED	Diagnostics of the output		
xx	00 ... 07, 10 ... 17, 20 ... 27, 30 ... 37		
○	Off	◐	Green on
●	On	◑	Red on
		☼	Green/yellow flashing

The behavior of LED D during an "Actuator supply not present" error depends on whether you have switched error reporting via the $FF8F_{hex}$ object on or off.

Parameterization in $FF8F_{hex}$	**D LED**
Do not report error to the controller	◐
Report error to the controller	☼

14.4 Output process data (0026_{hex}: PDOUT)

You can read the OUT process data of the module with this object.

The structure corresponds to the representation in the "Process data" section.

0026_{hex}: OUT process data (read)			
Subindex	**Data type**	**Length in bytes**	**Meaning**
0	Octet string	4	Output process data

15 Application objects

In the case of valid parameters, the parameterization is stored in the module permanently.

Index (hex)	Object name	Data type	A	L	Rights	Meaning/contents
FF8D	PD Output Substitute Configuration	UINT8	1	1	R/W	Substitute value behavior
FF8F	DiagOut	UINT8	1	1	R/W	Message “Actuator supply not present”

15.1 Substitute value behavior ($FF8D_{hex}$: PD Output Substitute Configuration)

With this object, you parameterize the behavior of the module so that an application reset can be detected if necessary.

$FF8D_{hex}$: Substitute value behavior (read, write)				
Subindex	**Data type**	**Length in bytes**	**Contents**	
0	UINT8	1	00_{hex} (Default)	Set outputs to 0
			01_{hex}	Hold last value

15.2 Message “Actuator supply not present” ($FF8F_{hex}$: DiagOut)

With this object, you parameterize whether the “Actuator supply missing” error is reported to the controller or not.

$FF8F_{hex}$: Message “Actuator supply not present” (Read, write)				
Subindex	**Data type**	**Length in bytes**	**Contents**	
0	UINT8	1	00_{hex} (Default)	Do not report error to the controller
			01_{hex}	Report error to the controller

As of hardware revision 05

If you parameterize the module so that the error is not reported to the controller, the corresponding indicator in LED E1 (red on) is suppressed. The behavior of the LED D is not affected.

Deviating behavior up to hardware revision 04

If you parameterize the module so that the error is not reported to the controller, the corresponding indicator in LED D (flashing green/yellow) is suppressed and the LED lights up green.

16 Device descriptions

The device is described in the device description files.
The device descriptions for controllers from Phoenix Contact are included in PC Worx and PLCnext Engineer, as well as in the corresponding service packs.
The device description files for other systems are available for download at phoenixcontact.net/products in the download area of the bus coupler installed.