General Specifications

Models ALR111, ALR121, ALE111
Subsystem Communication Module
(for FIO)

CENTUM CS 3000 R3

GS 33Q06Q46-31E

■ GENERAL

*This GS is hardware specifications of the Subsystem Communication Module (for FIO) that can be installed in the ESB Bus Node Unit (ANB10S, ANB10D), the ER Bus Node Unit (ANR10S, ANR10D) (*1) and the Compact Field Control Unit (for FIO) (AFF50S, AFF50D, AFV10S, AFV10D) (*2).*

*1: Requirements for installation of communication modules in the ER Bus Node Unit. Communication modules can be installed in the ER Bus Node Unit when the firmware revision of EB401 is R3 or later and any one of the following is met.
- When the FCS model name is AFG30☐, AFG40☐, AFG81☐, AFG82☐, AFG83☐ or AFG84☐ and the software revision is R3.03 or later.
- When the FCS model name is AFF50☐ and the software revision is R3.04 or later.
- When the FCS model name is AFV10☐ and the software revision is R3.05 or later.

*2: AFF50S and AFF50D are supported by R3.04 or later, and AFV10S and AFV10D are supported by R3.05 or later.

■ STANDARD SPECIFICATIONS

● Serial Communication Module

This Module exchanges data with a subsystem such as a programmable controller via a serial communication line using the Subsystem Communication Package. It can be installed in the ESB Bus Node Unit, the ER Bus Node Unit and the Compact Field Control Unit (for FIO).

Item	Specifications	
Model	**ALR111**	**ALR121**
Interface	RS-232C (2 ports)	RS-422/RS-485 (2 ports)
How connected	Point-to-point	Point-to-point (RS-422) Multipoint (RS-485)
How communicates	Half-duplex	
How synchronizes	Start-stop synchronization	
Communication speed	1200/2400/4800/9600/19200/38400/57600/76800/115200 bps	
Transmission code	ASCII/binary	
Character length	7/8 bits	
Stop bit length	1/2 bits	
Parity check	None/even/odd	
When a signal is received after data transmission	1 ms	
Transmission distance	Maximum 15 m	Maximum 1200 m (total extended length)
How installed	Mounted in ANB10☐, ANR10☐, AFF50☐, AFV10☐	
I/O wiring	AKB131, AKB132, AKB133, and AKB134 cables, etc.	Cable with 3-pair shield, AKB161 or AKB162
Wiring connection	D-sub 9-pin (female x 2)	Clamped with terminal block's M4 screws (5 poles x 2)
Current consumption	0.5 A	
Weight	0.3 kg	0.3 kg

YOKOGAWA

Yokogawa Electric Corporation
2-9-32, Nakacho, Musashino-shi, Tokyo, 180-8750 Japan
Tel.: 81-422-52-5634 Fax.: 81-422-52-9802

GS 33Q06Q46-31E
©Copyright Jan. 2001(YK)
9th Edition Apr. 1, 2013(YK)

● Ethernet Communication Module

This Module exchanges data with a subsystem such as PLC via an Ethernet communication line using the Subsystem Communication Package. It can be installed in the ESB Bus Node Unit, the ER Bus Node Unit and the Compact Field Control Unit (for FIO).

Item	Specifications
Model	**ALE111**
Physical Layer Interface	IEEE802.3 10BASE-T
How connected	Point-to-point
Connector	RJ-45
Communication speed	10 Mbps
Transmission distance	100 m per segment
Transmission route	100 ohm twisted -pair cable (not shielded)
Transmission distance	100 m per segment
No. of ports	One port
Media access control	CSMA/CD
Current consumption	0.5 A
Weight	0.3 kg

● Limitations of Installing the ALR111, ALR121, ALE111, ALP111, and ALF111 per FCU

Number of ALR111s, ALR121s, ALP111s, ALE111s per FCS:
Standard Field Control Station: Max.6 (*6) (3 pairs for a dual-redundant configuration)/FCS (*1)
Enhanced Field Control Station: Max.16 (8 pairs for a dual-redundant configuration)/FCS (*2)
Control Function for Compact Field Control Unit (for FIO):
Max.8 (4 pairs for a dual-redundant configuration)/FCS (*3)
Control Function for Basic Field Control Unit (for FIO, for Vnet/IP):
16 max. (*5) (8 pairs for a dual-redundant configuration)/FCS (*4)

*1: AFS30☐, AFS40☐
*2: AFG30☐, AFG40☐, AFG81☐, AFG82☐, AFG83☐, AFG84☐
*3: AFF50☐
*4: AFV10☐
*5: When not using Application Capacity Expansion Package, the maximum total number is 8/FCS. For details, refer to “Control Function for Basic Field Control Unit (for FIO, for Vnet/IP)” (GS 33P03K10-31E).
*6: ALP111 cannot be installed in Standard Field Control Station.

Number of ALR111s, ALR121s, ALP111s, ALE111s, ALF111 per ER bus train(*7): Max.8 per ER bus train

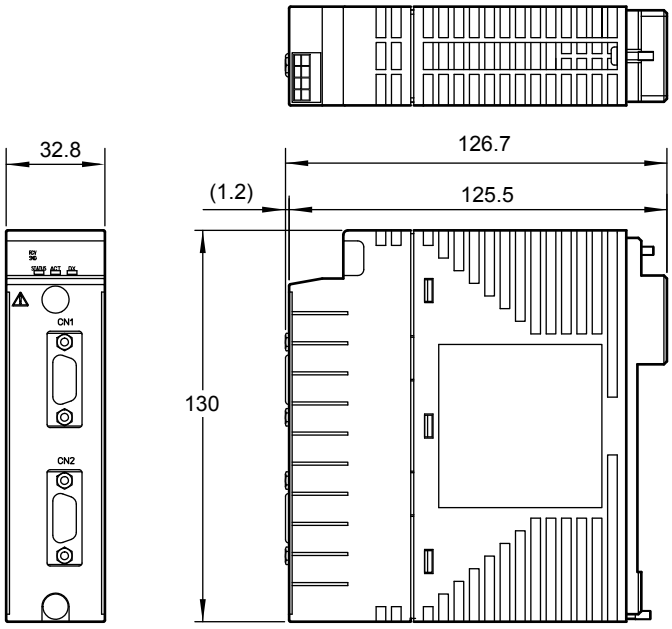
*7: The communication module (ALR111, ALR121, ALE111 and ALP111) can be installed to remote node only when the main memory of the FCS is 32 MB.

All Rights Reserved. Copyright © 2001, Yokogawa Electric Corporation

■ EXTERNAL DIMENSIONS

● ALR111 Serial Communication Module (RS-232C)

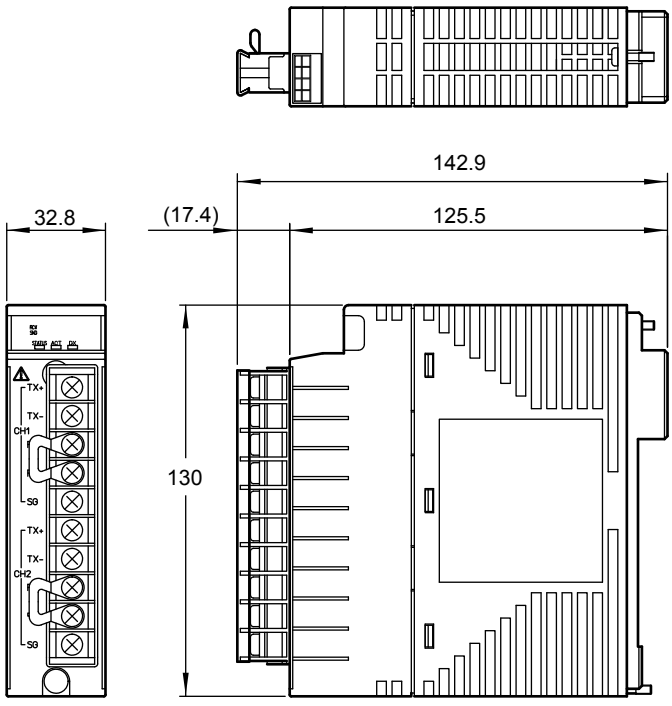
Unit: mm



F02E.ai

● ALR121 Serial Communication Module (RS-422/RS-485)

Unit: mm

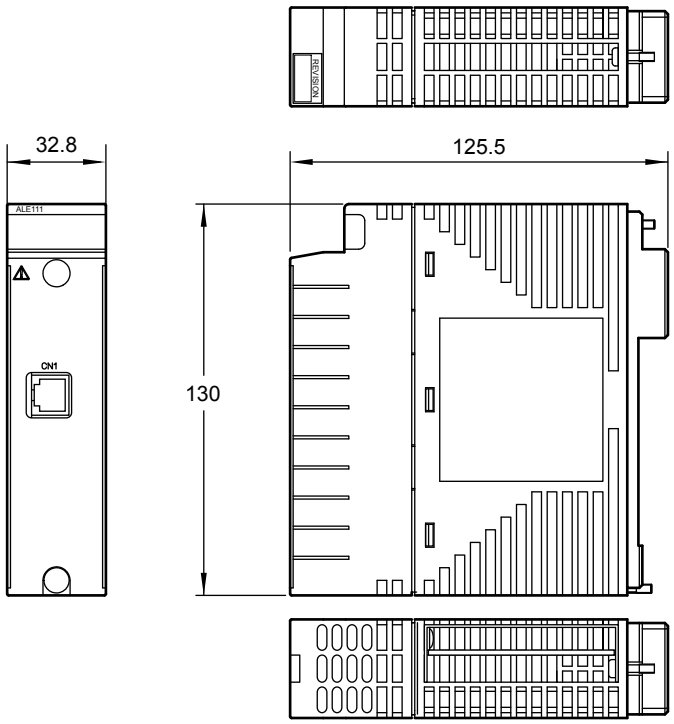


F03E.ai

All Rights Reserved. Copyright © 2001, Yokogawa Electric Corporation

● ALE111 Ethernet Communication Module

Unit: mm



F01E.ai

■ MODELS AND SUFFIX CODES

		Description
Model	ALR111	RS-232C Communication Module (2-port, 1200 bps to 115.2 kbps)
Suffix Codes	-S	Standard Type
	5	With no explosion protection
	E	With explosion protection
	0	Basic Type
	1	With ISA Standard G3 option

		Description
Model	ALR121	RS-422/RS-485 Serial Communication Module (2-port, 1200 bps to 115.2 kbps)
Suffix Codes	-S	Standard Type
	5	With no explosion protection
	E	With explosion protection
	0	Basic Type
	1	With ISA Standard G3 option

		Description
Model	ALE111	Ethernet Communication Module
Suffix Codes	-S	Standard Type
	5	With no explosion protection
	E	With explosion protection
	0	Basic Type
	1	With ISA Standard G3 option

All Rights Reserved. Copyright © 2001, Yokogawa Electric Corporation