



# Drive Network Module For GE Fanuc Series 90-30 Product Specifications and Installation Data

## 1 DESCRIPTION

The Horner APG Drive Network Module allows for the direct control of up to 16 GE AF300 Adjustable Frequency Drives over a Serial RS485 Network. The module provides 2 %Q, 1- %I, 1-%AQ and 1 %AI per drive to permit the PLC to control RUN, FWD-REV, FAULT INDICATION, SPEED, and FAULT CODE, respectively. This allows the Series 90™-30 to completely control the operation of the drive and to monitor the drive fault status. This drive network supports a combination of up to 16 AF300B or AF300C Drives.

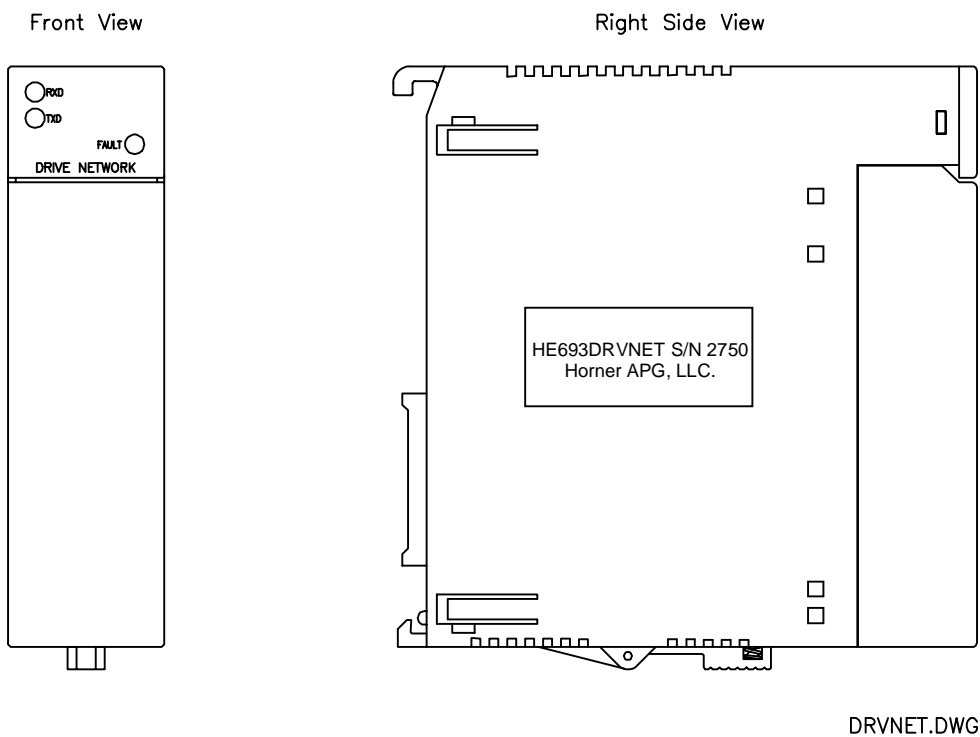


Figure 1 – HE693DRVNET Module

## 2 SPECIFICATIONS

Table 1 - HE693DRVNET Specifications			
Specification	HE693DRVNET	Specification	HE693DRVNET
Power Consumption	100mA @ 5VDC	I/O Points Required	32%Q, 16%I, 16%AQ, 16%AI
Number of Drives	up to 16	Serial Network	Multidrop RS485
Types Supported	AF300B, AF300C	Operating Temperature	0 to 60• C (32 to 140• F)

## 3 CONFIGURATION

```

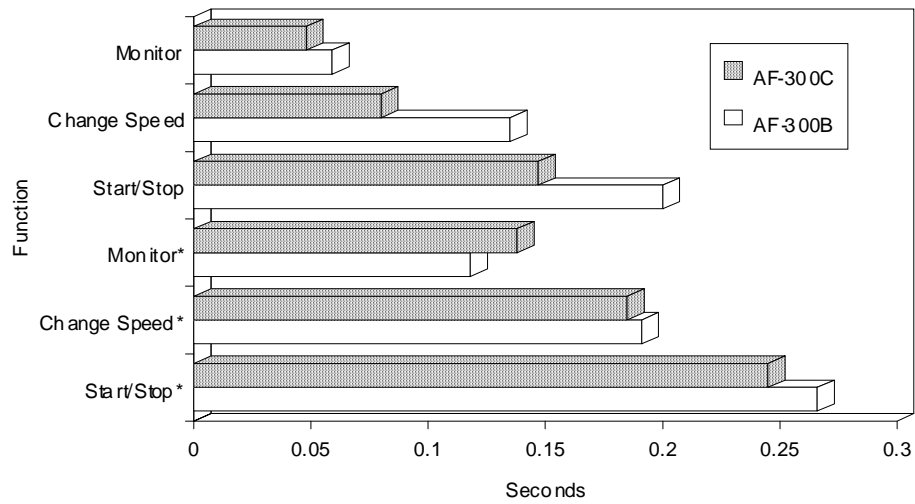
RACK
1 loc  2 disc  3 frgn  4 di  5 gm  6  7  8  9  10
>
SERIES 90-30 MODULE IN RACK 2 SLOT 2
SOFTWARE CONFIGURATION
SLOT 2
Catalog #: FOREIGN FOREIGN MODULE
FRGN
Module ID : 3
%I Ref Adr : %I0001 Byte 1 : 00000001 Byte 9 : 00
%I Size : 16 Byte 2 : 00000000 Byte 10 : 00
%Q Ref Adr : %Q0001 Byte 3 : 00 Byte 11 : 00
%Q Size : 32 Byte 4 : 00 Byte 12 : 00
%AI Ref Adr : %AI001 Byte 5 : 00 Byte 13 : 00
%AI Size : 16 Byte 6 : 00 Byte 14 : 00
%AQ Ref Adr : %AQ001 Byte 7 : 00 Byte 15 : 00
%AQ Size : 16 Byte 8 : 00 Byte 16 : 00
    
```

Figure 2 - Logicmaster 90-30 Foreign Module Configuration

To reach this screen, select I/O Configuration (F1), cursor over to the slot containing the module and select Other (F8), and Foreign (F3).

Table 2 – Configuration Parameters			
Byte 1	Byte 2	Bytes 3	Bytes 4
0001	Drive Speed Feedback (0000 = OFF) (0001 = ON)	Number of AF300Bs (00-10H)	Number of AF300Cs (00-10H)
<b>Note: The sum of Byte 3 and Byte 4 must not exceed 10H (16 decimal)</b>			

The necessary parameters are %I Size, %Q Size, %AI Size, %AQ Size, and Bytes 1-4. Drives must be assigned consecutive network ID's starting with 1. If a mixture of AF300B and AF300C drives are used, AF300Bs must have the lower network ID numbers.

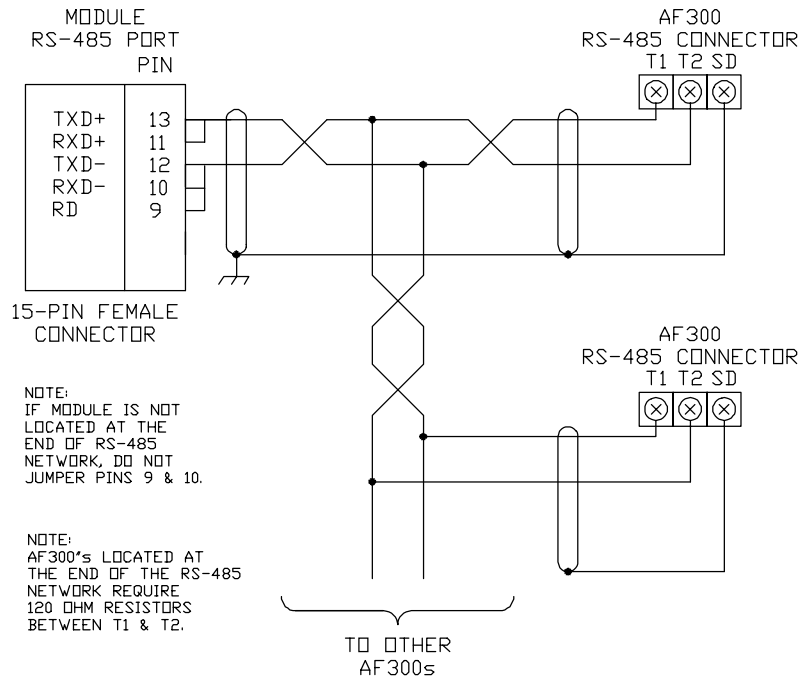


**Figure 3 – DRVNET Update Time**

**3.1 Drive Configuration**

The communications for the DRVNET module is fixed at 9600 baud, no parity, 8 data bits and 1 stop bit. Refer to the user's manual for the AF 300 Drive configuration. OPCIII-GSA-RS for the AF 300B and OPCII-RS for the AF 300C.

## 4 WIRING / INSTALLATION



**Figure 4 – Wiring**

### 4.1 Installation Hints

The following installation hints need to be followed.

- Shielded, twisted-pair communications wiring should be used over the RS-485 network.
- Communications wiring needs to be routed in separate conduit from any high voltage, high noise wiring.
- A good earth ground connection of the shield is critical.

## 5 DRIVE NODE MAPPING

DRVNET Bits	Drive Affected	DRVNET Bits	Drive Affected
%Q1, %Q17, %I1, %AQ1, %AI1	Drive Node 1	%Q9, %Q25, %I9, %AQ9, %AI9	Drive Node 9
%Q2, %Q18, %I2, %AQ2, %AI2	Drive Node 2	%Q10, %Q26, %I10, %AQ10, %AI10	Drive Node 10
%Q3, %Q19, %I3, %AQ3, %AI3	Drive Node 3	%Q11, %Q27, %I11, %AQ11, %AI11	Drive Node 11
%Q4, %Q20, %I4, %AQ4, %AI4	Drive Node 4	%Q12, %Q28, %I12, %AQ12, %AI12	Drive Node 12
%Q5, %Q21, %I5, %AQ5, %AI5	Drive Node 5	%Q13, %Q29, %I13, %AQ13, %AI13	Drive Node 13
%Q6, %Q22, %I6, %AQ6, %AI6	Drive Node 6	%Q14, %Q30, %I14, %AQ14, %AI14	Drive Node 14
%Q7, %Q23, %I7, %AQ7, %AI7	Drive Node 7	%Q15, %Q31, %I15, %AQ15, %AI15	Drive Node 15
%Q8, %Q24, %I8, %AQ8, %AI8	Drive Node 8	%Q16, %Q32, %I16, %AQ16, %AI16	Drive Node 16

**NOTE: All bit references assume the DRVNET module is configured with starting reference address 1.**

## 6 I/O DESCRIPTION

Status	0	1
Function	No Fault	Fault has occurred

Status	0	1
Function (%Q1-16)	Stopped	Running
Function (%Q17-32)	Forward	Reverse

If fault has occurred
Fault description (see table below)
If speed monitoring is on:
Current drive speed ([X100] for AF300B, [X10] for AF300C)

AF300B:
AQ = drive speed X 100 (i.e. AQ = 5280, freq. = 52.80 Hz)
AF300C:
AQ = drive speed X 10 (i.e. AQ = 528, freq. = 52.8 Hz)

## 7 FAULT DESCRIPTION

%AI Value	Fault Description	%AI Value	Fault Description
0	No Fault	6	OH1
1	OC1	7	OH2
2	OC2	8	OL1
3	OC3	9	OL2 (AF300C Only)
4	LV (AF300B) UV (AF300C)	13	Communications Error
		99	Configuration Error
5	OV		

**NOTE:** The drive should be stopped then started to clear a fault.