

Part No	Status	Description	Extended Description	CSA	UL	ATEX	CE (LVD)	CE (EMC)	ABS	DNV	LRS
9905-968	A	MODULE	LINKNET 6 CHANNEL 4-20 MA IN		x	x	n/a	x	x	x	x
9905-969	A	MODULE	LINKNET 6 CHANNEL 4-20 MA IN W/ 24 V		x	x	n/a	x	x	x	x
9905-970	A	MODULE	LINKNET 6 CHANNEL 100 OHM RTD		x	x	n/a	x	x	x	x
9905-971	A	MODULE	LINKNET DISCRETE IN		x	x	n/a	x	x	x	x
9905-972	A	MODULE	LINKNET 6 CHANNEL 4-20 MA OUT		x	x	n/a	x	x	x	x
9905-973	A	MODULE	LINKNET DISCRETE OUT		x	x	n/a	x	x	x	x
9907-072	A	Power Supply	SGL Out 18-32 VDC NetCon	x			x	x	x	x	x
9907-073	A	Power Supply	Multi Out 18-32 VDC NetCon	x			x	x	x	x	x
9907-074	A	Power Supply	SGL Out 42-60 VDC NetCon	x			x	x	x	x	x
9907-075	A	Power Supply	Multi Out 42-60 VDC NetCon	x			x	x	x	x	x
9907-076	A	Power Supply	SGL Out 120 VAC/DC NetCon	x			x	x	x	x	x
9907-077	A	Power Supply	Multi Out 120 VAC/DC NetCon	x			x	x	x	x	x
9907-078	A	Power Supply	SGL Out 220 VAC/DC NetCon	x			x	x	x	x	x
9907-079	A	Power Supply	Multi Out 220 VAC/DC NetCon	x			x	x	x	x	x
9907-205	A	Programmer	Hand Held, CE Compliant, 4 Piece Kit				x	x	x		

Updated Sep 15, 2015 (File 00372-04-07-01.xlsx)

Status	Definition
A	Active
ANP	Active, Non-preferred
AS	Active Service
INA	Inactive

Woodward Governor Digital Modules & Miscellaneous Parts	
Part Number	Description
9905-696	LP/IP Thrust Piston Mod. Valve
9905-698	505
9905-699	505 (New Style)
9905-700	0-200MA ProAct
9905-701	EG10P
9905-702	UG
9905-704	DSLC
9905-707	Digital Synchronizer & Load Ctrl
9905-708	Digital Synchronizer & Load Ctrl
9905-709	Digital Synchronizer & Load Ctrl
9905-710	Digital Synchronizer & Load Ctrl
9905-711	Digital Synchronizer & Load Ctrl
9905-718	TM55P
9905-722	EG3P
9905-750	ProTech 203
9905-751	ProTech 203
9905-752	ProTech 203
9905-753	ProTech
9905-754	ProTech 203
9905-755	ProTech 203
9905-756	ProTech 203
9905-760	LinkNet Termination Assy
9905-763	TM-25 Actuator, Extends
9905-764	TM-25 Actuator, Retracts
9905-765	TM25LP
9905-766	TM-200LP
9905-767	TM25LP
9905-768	TM 25
9905-769	TM-200LP
9905-770	TM25LP

Woodward Governor Digital Modules & Miscellaneous Parts	
Part Number	Description
9905-771	TM-200LP
9905-772	TM-200LP – Dual Coil
9905-773	TM-200LP – Dual Coil
9905-774	TM-200LP – Dual Coil
9905-776	Hydraulic Amplifier/EG3P
9905-777	EG10P
9905-778	EG3P
9905-779	Hydraulic Amplifier/EG3P
9905-780	Hydraulic Amplifier/EG3P
9905-782	Hydraulic Amplifier/EG3P
9905-784	EG10PS
9905-785	Hydraulic Amplifier/EG3P
9905-787	Hydraulic Amplifier/EG3P
9905-792	ProAct Plus 4-20mA Fuel Lmtr
9905-793	701
9905-795	DSLC
9905-796	DSLC
9905-797	DSLC
9905-798	DSLC
9905-799	DSLC
9905-857	Peak 150
9905-858	Peak 150
9905-859	Peak 150
9905-860	Peak 150
9905-861	Peak 150
9905-863	Peak 150
9905-864	Peak 150
9905-866	Peak 150
9905-867	Peak 150
9905-869	ProTech 203

Woodward Governor Digital Modules & Miscellaneous Parts	
Part Number	Description
9905-870	ProTech 203
9905-871	ProTech 203
9905-872	ProTech 203
9905-873	ProTech 203
9905-874	ProTech 203
9905-875	ProTech 203
9905-876	ProTech 203
9905-877	ProTech 203
9905-878	ProTech 203
9905-879	ProTech 203
9905-880	ProTech 203
9905-881	ProTech 203
9905-882	ProTech 203
9905-883	ProTech 203
9905-884	ProTech 203
9905-885	ProTech 203
9905-886	ProTech 203
9905-891	Valve
9905-896	505 Bulkhead
9905-897	Valve
9905-902	I/H Converter
9905-903	ProTech 203
9905-908	Woodward Governor
9905-909	Woodward Governor
9905-910	Woodward Governor
9905-911	Woodward Governor
9905-912	Valve
9905-915	System-IP/HP Bleed Valve Ctrl
9905-916	Servovalve-Single Chan IP VSV
9905-917	505

11.6—LINKnet 6Ch RTD Module

11.6.1—Module Description

The LINKnet 6Ch RTD Module interfaces to six temperature sensing three wire RTD transducers. The module comes in two different RTD resistance ranges (100 and 200 Ω). Both types of modules have unique part numbers and interface to one of the four channels on the 4Ch LINKnet Controller Module through a serial network cable. See Appendix A for desired part numbers. The module has a built-in reference voltage that is used to verify proper operation of the A/D converter. Appropriate faults are annunciated through the application program. Up to 60 nodes or LINKnet I/O modules can be connected to each channel of the LINKnet Controller Module.

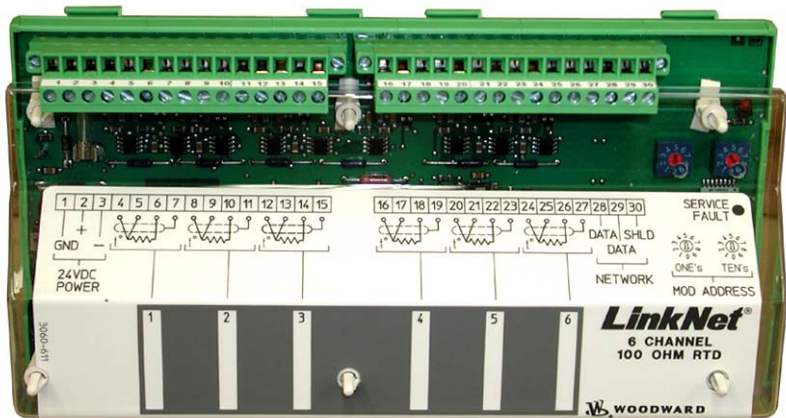


Figure 11-6—LINKnet 6Ch RTD Module

11.6.2—Module Specification

Table 11-3. LINKnet 6Ch RTD Module Specification

Number of Inputs:	6
Input type:	100 or 200 Ω 3-wire RTDs
Temperature Measurement Range	
European Curve:	–65 to +649 °C (–85 to +1200 °F)
American Curve:	–65 to +457 °C (–85 to +854 °F)
RTD source current:	2 mA max
Note: Must conform to (Deutsche Institut für Normung) DIN standard for 100 or 200 Ω European curve (Alpha = .00385) or American curve 100 or 200 Ω curve (Alpha = .00392)	
Resolution:	12 bits
Temp Coefficient (ppm/°C):	290
Accuracy:	1% at 25 °C (factory calibrated)
Input Impedance:	2.2 M Ω
Power Supply Input:	18 to 32 Vdc
Power Required:	3.1 W at 24 Vdc

11.7—LINKnet 6Ch T/C Module

11.7.1—Module Description

The LINKnet 6Ch T/C Module connects to six Type J or K thermocouples. The thermocouple type is selected in the application program. There is a fail high and a fail low version of the module, which allow the input channels to be pulled high or low on an open input. See Appendix A for desired part numbers. The modules have an AD592 ambient temperature sensor mounted on them for cold junction temperature sensing. The cold junction compensation is performed in software. The module has a built-in reference voltage that is used to verify proper operation of the A/D converter. Appropriate faults are annunciated through the application program. Up to 60 nodes or LINKnet I/O modules can be connected to each channel of the LINKnet Controller Module.

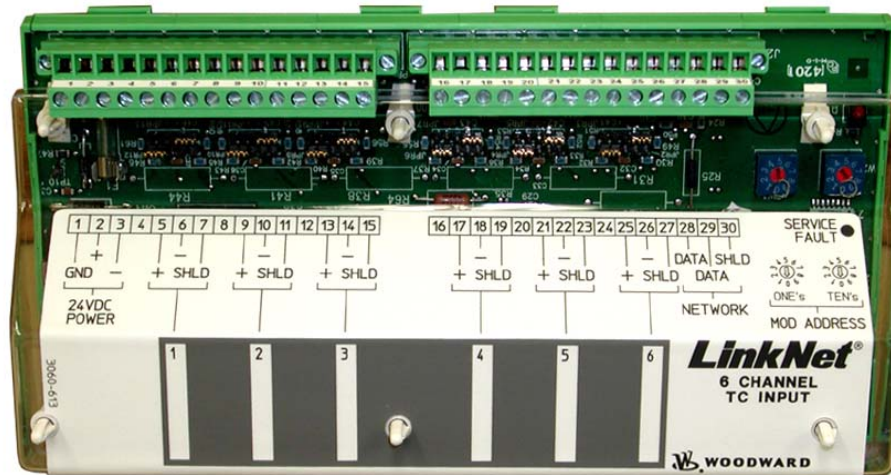


Figure 11-9—LINKnet 6Ch T/C Module

11.7.2—Module Specification

Table 11-5. LINKnet 6Ch T/C Module Specification

Number of Inputs: 6 internal + 1 cold junction

Note: Type J and K thermocouples must conform to the common commercial specifications published in the Annual Book of ASTM Standards with voltage predictions in line with N.I.S.T. Monograph 175 or ITS-90.

Open thermocouple detection:	Fail Low and Fail High depending on P/N
Cold Junction:	AD590
Resolution:	12 bits
Temp Coefficient (ppm/□□C):	235
Accuracy:	1% at 25 °C (factory calibrated)
Input Impedance:	2.0 MΩ
Power Supply Input:	18 to 32 Vdc
Power Required:	2.4 W at 24 Vdc

11.8—LINKnet 6Ch Current Input Module

11.8.1—Module Description

The LINKnet 6Ch Current Input Module interfaces to six 4–20 mA transducers. There are two version of the module; one for loop powered transducers and the other for self-powered transducers. Mixing self-powered and loop powered transducers on the same module is not an option. See Appendix A for desired part numbers. The module has a built-in reference voltage that is used to verify proper operation of the A/D converter. Appropriate faults are annunciated through the application program.

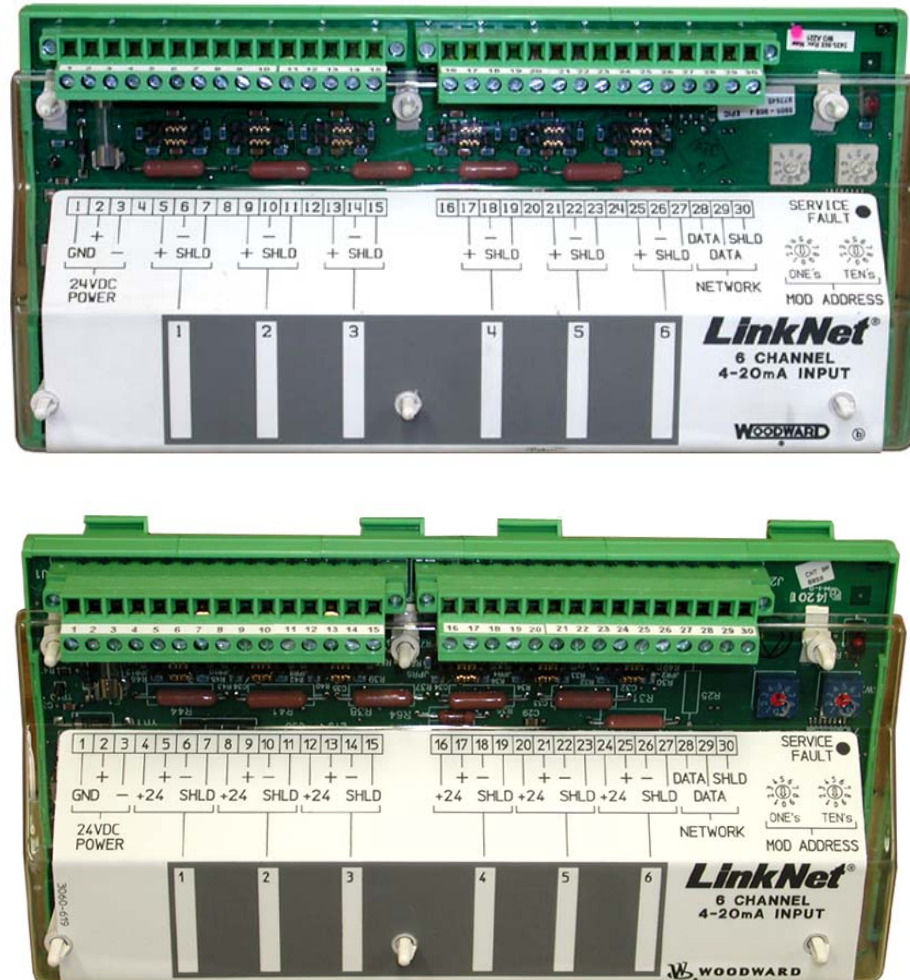


Figure 11-12—Both LINKnet 6Ch Current Input Modules

11.9—LINKnet 16 Channel Discrete Input Module

11.9.1—Module Description

The LINKnet 16 Channel Discrete Input (DI) Module provides sixteen discrete input for field switches or relay contacts. All sixteen inputs require a +24 Vdc source. A filtered and fused internal power source is provided or an external +24 Vdc source referenced to the 24 V Common of the module may be used to sense the state of the contact or switch.

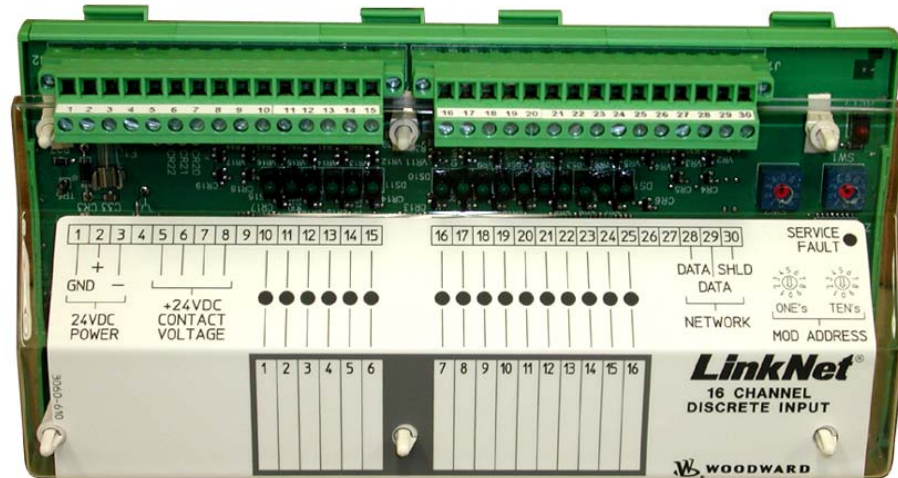


Figure 11-15—LINKnet 6Ch DI Module

11.9.2—Module Specification

Table 11-9. LINKnet 6Ch DI Module Specification

Number of Inputs:	16
Input thresholds:	
Low voltage:	<8 Vdc = "OFF" >16 Vdc = "ON"
Discrete Input Current:	13.1 mA per channel when "on" (@ 24 V)
External input voltage:	18 to 32 Vdc
Power Supply Input:	18 to 32 Vdc
Power Required:	6.5 Watts at 24 Vdc

11.9.3—Isolation

Table 11-10. LINKnet 6Ch DI Module Isolation

Network to I/O channel:	277 Vac
Power supply input to network:	277 Vac
I/O channel to I/O channel:	0 V
PS input to I/O channel:	500 Vdc
Field Wiring:	14 AWG maximum wire size
Ambient Temperature Range:	−40 to +55 °C

A "type" fault is annunciated through the application program when the wrong module type is installed at a given address. For example, installing a thermocouple module in place of an RTD module generates a type fault. If an output node receives data intended for a different module type, it will not update its outputs, and will set them to the "off" state when its watchdog timer times out.

No message faults, address faults, and type faults are non-latching. When these faults occur for an input module, the application program will give default values for each channel.

Troubleshooting Flowchart

If a problem occurs with the LINKnet network, use Figure 11-25 (Troubleshooting Flowchart) as a guide to find and repair the problem.

11.10—LINKnet 6 Channel Analog Output Module

11.10.1—Module Description

The LINKnet 6 Channel Analog Output (AO) Module provides six 4-20 mA analog outputs. The output current is monitored by the module processor through an A/D converter. The read back value and status are available through the application program. The 4-20 mA output module has a watchdog that monitors the communications from the module processor to the D/A converter, and disables the current drivers upon a loss of communications of more than 1.2 seconds.

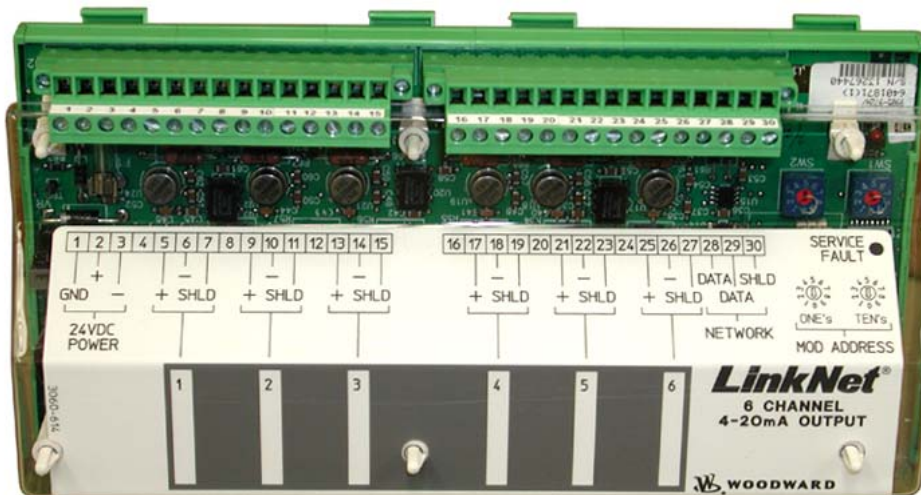


Figure 11-18—LINKnet 6 Channel Analog Output Module

11.10.2—Module Specification

Table 11-11. LINKnet 6 Channel Analog Output Module Specification

Number of Outputs:	6
Current output range:	0–25 mA
Power Supply Input:	18 to 32 Vdc
Power Required:	6.0 Watts at 24 Vdc

11.11—LINKnet 8 Channel Discrete Output Module

11.11.1—Module Description

The LINKnet 8 Channel Discrete Output (DO) Module provides eight 5 amp form C relay outputs. An internal set of relay contacts is fed back to the module processor, for read back status. The read backs are compared with the desired outputs, and a status annunciated for each relay in the application program. The relay output module has a watchdog that monitors the communications with the module processor, and disables the relay drivers upon a loss of communications of more than 1.2 seconds.

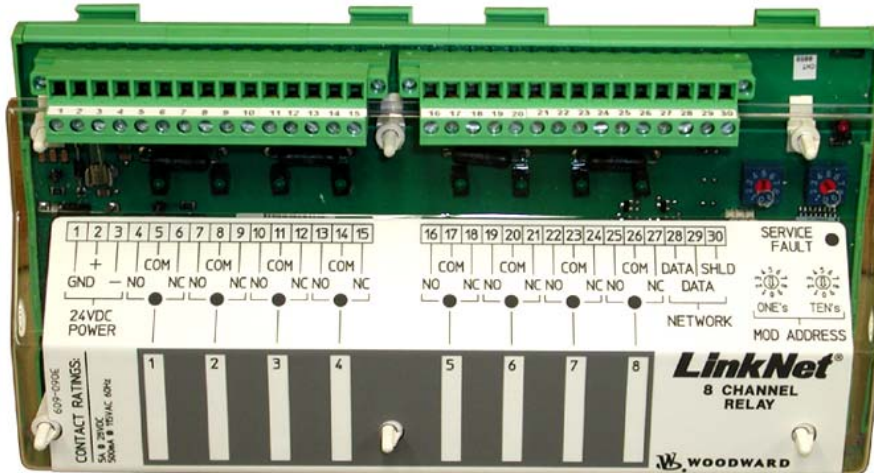


Figure 11-21—LINKnet 8 Channel Discrete Output Module

11.11.2—Module Specification

Table 11-13. LINKnet 8 Channel Discrete Output Module Specification

Number of Outputs: 8 (form C relay outputs)
Ratings: 5.0 A @ 28 Vdc resistive
0.5 A @ 115 Vac resistive

LINKNET® RELAY OUTPUT MODULE EFFECTS OF INPUT CURRENT

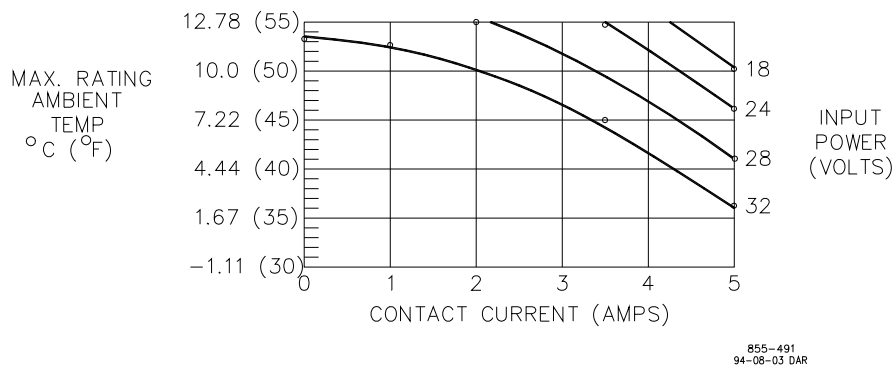


Figure 11-22—LINKnet Relay Contacts

Power Supply Input: 18 to 32 Vdc
Power Required: 5.0 Watts at 24 Vdc