RF/GPS Priority Detector

ST-9283

EMTRAC

Intersections equipped with the EMTRAC system have an omni-directional UHF antenna (mounted either on a signal pole or on the traffic cabinet) and a Priority Detector, which consists of a 900-MHz spread-spectrum transceiver and a single-board computer integrated in a dual-card assembly that plugs into the traffic cabinet's detector rack or on an interior shelf.

The Priority Detector can be installed directly into the input file of Type 170 controller cabinets or may be provided with a Priority Detector Case (ST-9194) for NEMA cabinets (when input-file space is not available).

Priority Detector in Shelf-Mount Case

Features:

- Includes serial RS-232 or Ethernet communications to enable remote monitoring of system activity and configuration of EMTRAC equipment through the existing traffic network
- Supports up to 16 inputs and 16 outputs, with one auxiliary output configurable as a GPS timing signal
- Logs up to 5,000 locally-stored events (up to 10,000 events with removable memory)
- Four main directional outputs and up to 12 auxiliary outputs are provided, with each input and output signal optically isolated for 2,500 volts
- Operates on 120 VAC with its own power supply, and fits all Major NEMA and 170 Type Cabinets
- Includes indicator lights for power on, signal received, active-output by priority, and direction of signal or channel
- Includes toggle switches to send output in either Priority 1 or Priority 2 mode, allowing manual testing of detector function and intersection response. The Standby/Active switch enables testing and configuration without affecting live signal
- Compatible with all major brands of NEMA and 170/2070 controllers
- Optically-isolated outputs (and auxiliary inputs)

Features:

The ST-9283 Priority Detector includes the following connection options:

- **Card-Edge**: Controller Connections
- **RJ45 Ethernet** (local computer/network): 2 ports
- **USB Mini-B**: Interface Computer
- **Detector-Case Rear D-Sub** (shelf-mount controller connections): Up to 16 auxiliary inputs and outputs
- **26-Pin D-Sub Serial**: Controller Connections

Software Settings and Features

- Time to Hold Request After Loss of Signal
- Max. Request Time/Min. Request Times (by channel)
- Priority Service (how simultaneous requests are served)
- Activity Log Display of Most Recent Events
- Vehicles Allowance or Denial (by vehicle ID)
- Minimum Time Duration (Priority Detector will give an output signal for minimum amount of time)
- Configurable Output Channels (by direction)
- Communications Baud Rate

Card-Edge Connections (Circuit-Board Backplanes)					
Card	Pin	Connection	Card	Pin	Connection
Logic (J12)	A	DC Ground	Power Supply (J13)	A	NEMA Logic Ground (optional)
	B	+24V DC*		B	+24V DC (optional)
	C	No Connection		C	No Connection
	D, E	Aux. Output 1, Aux. Output 2 (respectively)*		D, E	No Connection
	F	**Output, Channel 1***		F	**Output, Channel 2***
	H	NEMA Logic Ground		H	NEMA Logic Ground
	J, K	Aux. Output 3, Aux. Output 4 (respectively)*		J, K	No Connection
	L	Chassis Ground		L	Chassis Ground
	M	AC Neutral (AC-)		M	AC Neutral (AC-)
	N	No Connection		N	120V (AC+)
	P, R	Aux. Input 1, Aux. Input 2 (respectively)*		P, R	No Connection
	S, T	Reserved		S, T	No Connection
	U, V	Aux. Input 3, Aux. Input 4 (respectively)*		U, V	No Connection
	W	**Output, Channel 3***		W	**Output, Channel 4***
	X	NEMA Logic Ground		X	NEMA Logic Ground
	Y, Z	Reserved		Y, Z	No Connection

*Default connections shown. These inputs and outputs are either jumper or software configurable.

Detector-Case Rear (optional): 15-Pin Sub-D (DB-15)		
Pin	Wire Color	Connection
1	White	120V AC Neutral
2	Yellow	NEMA Logic Ground
3	Black	120V (AC+)
4	White/Red	Aux. Output 1
5	White/Black	Aux. Output 2
6	Blue	Rear Output, Channel 1
7	Red	Rear Output, Channel 2
8	White/Yellow	Aux. Output 3
9	Orange	Rear Output, Channel 3
10	Brown	Rear Output, Channel 4
11	White/Blue	Aux. Input 1
12	Purple	Aux. Input 2
13	White/Green	Aux. Input 3
14	Gray	Aux. Input 4
15	Green	Chassis Ground

Detector-Case Rear (optional): 37-Pin High-Density Sub-D		
Pin	Wire Color	Connection
1, 2, 3, 4	See Manual	Aux. Output 5, 6, 7, 8 (respectively)
5, 6	See Manual	Aux. Output 5, 6 (respectively)
7, 8	See Manual	Aux. Input 9, 10 (respectively)
9, 10	See Manual	Aux. Input 7, 8 (respectively)
11, 12	See Manual	Aux. Input 11, 12 (respectively)
13	Yellow/Red	Ground Negative
14	Yellow/Blue	+24V DC
16	White/Brown	Aux. Output 4
17, 18, 19, 20	See Manual	Aux. Output 9, 10, 11, 12 (respectively)
21	Green	Chassis Ground
22	Yellow	NEMA Logic Ground
25, 26	See Manual	Aux. Input 13, 14 (respectively)
30, 31	See Manual	Aux. Input 15, 16 (respectively)
36, 37	NC	TX Serial, RX Serial (respectively)
Remaining	NC	Reserved

Front-Panel 26-Pin Connector			
Pin	Wire Color	Connection	
1 - 4	Blck, Brwn, Red, Orange	Output 1 - 4 (respectively)	
5 - 12	See Manual	Outputs 5 - 12 (respectively)	
13	Brown/Orange	NEMA Logic Ground	
14	Brown/Yellow	Front Input 1	See Manual for Jumper Options
15	Brown/Green	Front Input 2	
16	Brown/Blue	Front Input 3	
17	Brown/Purple	Front Input 4	
18	Brown/Gray	Front Input 5	
19	Yellow/Black	Front Input 6	
20	Yellow/Red	Front Input 7	
21	Yellow/Orange	Front Input 8	
22 - 25	Ylw w/Grn, Blu, Prpl, Gry	Frnt Inpt 9 - 12 (respectively)	
26	White/Purple	NEMA Logic Ground	

Specifications - Priority Detector	
Dimensions:	**Rack-Mount**: 4.5" (H) x 2.3" (W) x 6.95" (D) **Detector In Case**: 5.25" (H) x 2.75" (W) x 8" (D)
Comm. Ports:	100Base-T Ethernet (2), USB Mini-B, Serial (RS-232)
Outputs:	16 (4 standard, 12 auxiliary)
Inputs:	16 NEMA Logic (4 standard, 12 auxiliary)
Power:	89 to 135 VAC, 50/60 Hz
Environ:	**Tmp**: -34°C (-30°F) to +74°C (+165°F); **Hum**: 5 to 95% Rel.

Specifications - Antennas (required only for RF applications)	
Gain (Ant.):	18" Antenna - 3 dBi typical; 36" Antenna - 6 dBi typical
Impedance:	50 Ohm nominal
Connectors:	BNC (f) Standard, N (f) Optional
Operational Temperature:	-40 ° to +85 ° C