Emtron ED7 Pinout

Date: March 2025

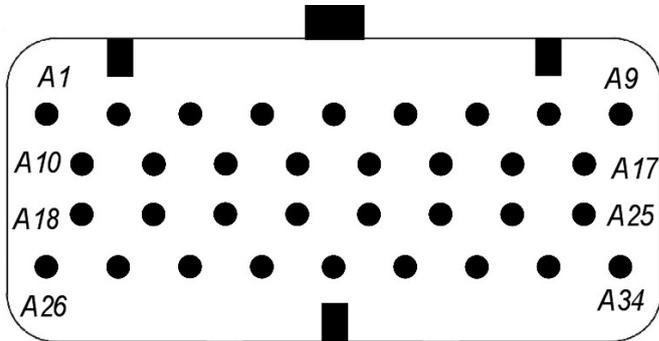DISPLAY UNIT

Connector Superseal 34-Way KEY 1
(12.0A continuous current)

Looking into Connector

Pin	Channel Name	Pin	Channel Name
1	14V Switched Supply	18	Gigabit Ethernet +Tx/Rx Pair 1
2	14V Backup Supply	19	Gigabit Ethernet -Tx/Rx Pair 1
3	Sensor Supply: 5.0V	20	Gigabit Ethernet -Tx/Rx Pair 3
4	Analog Input Channel 1	21	Gigabit Ethernet +Tx/Rx Pair 3
5	Analog Input Channel 2	22	Speed Input 1
6	Analog Input Channel 3	23	Speed Input 2
7	Analog Input Channel 4	24	Speed Input 3
8	Analog Input Channel 5	25	Speed Input 4
9	Analog Input Channel 6	26	Gigabit Ethernet +Tx/Rx Pair 2
10	12V Regulated Output 2	27	Gigabit Ethernet -Tx/Rx Pair 2
11	RS232 Transmit Output	28	Gigabit Ethernet +Tx/Rx Pair 4
12	RS232 Receive Input	29	Gigabit Ethernet -Tx/Rx Pair 4
13	0V Reference OUT	30	CAN 1 High
14	Analog Input 0V Reference	31	CAN 1 Low
15	Video 0V Reference	32	CAN 2 High
16	Video Input 1	33	CAN 2 Low
17	Video Input 2	34	Ground

Function Pin Assignment

Power:

Pin	Channel Name
1	14V Supply +
34	Ground -
2	14V Backup Supply +

Sensor Supply :

Pin	Channel Name
3	Sensor Supply: 5.0V
14	Sensor 0V Reference

Gigabit Ethernet Communications T-568A Standard :

Emtron Pin	RJ45 Pin T-568A	Description	Cat5e Wire Colour
18	1	Ethernet Tx/Rx + Pair 1	Green/White
19	2	Ethernet Tx/Rx - Pair 1	Green
26	3	Ethernet Tx/Rx + Pair 2	Orange/White
27	6	Ethernet Tx/Rx - Pair 2	Orange
20	4	Ethernet Tx/Rx + Pair 3	Blue
21	5	Ethernet Tx/Rx - Pair 3	Blue/White
28	7	Ethernet Tx/Rx + Pair 4	Brown/White
29	8	Ethernet Tx/Rx - Pair 4	Brown

NOTE: The Orange/White and Brown/White can often look very similar in colour so make sure the correct wire is used.

CAN Communications :

Pin	Channel Name
30	CAN 1 High
31	CAN 1 Low
32	CAN 2 High
33	CAN 2 Low

RS232/LIN Communications :

Pin	Channel Name
11	RS232 Transmit Output
12	RS232 Receive Input
13	0V Reference Out

Analog Inputs :

Pin	Channel Name	Voltage Range
4	Analog Input Channel 1	0 – 5.0V
5	Analog Input Channel 2	0 – 5.0V
6	Analog Input Channel 3	0 – 5.0V
7	Analog Input Channel 4	0 – 5.0V
8	Analog Input Channel 5	0 – 5.0V or 0 – 16.0V
9	Analog Input Channel 6	0 – 5.0V or 0 – 16.0V
14	Analog Input 0V Reference	

NOTE: ANV5-6 pins have selectable input ranges; 0 – 5.0V or 0 – 16.0V

Speed Inputs :

Pin	Channel Name
22	Speed Input 1
23	Speed Input 2
24	Speed Input 3
25	Speed Input 4
13	0V Reference Out (if required)

Video Inputs :

Pin	Channel Name
16	Video Input 1
17	Video Input 2
15	Video 0V Reference

Important Notes

14V Switched Supply (Pin 1)

This is a switched 14V supply. Constant power should not be supplied on this pin.

14V Backup Supply (Pin 2)

A Constant 14V supply should be wired to this pin. When the power is removed from pin "14V Switched Supply" the ED7 automatically switches to the " 14V Backup Supply" to keep itself powered. This will allow the ED7 to complete critical tasks before shutting itself down (for example data logging storage).

NOTE: When the "14V Backup Supply" is wired to the ED7, no additional current is drawn when the device is OFF.

Analog Sensor 0V Reference (Pin 14)

As the name indicates these should be connected directly to the 0V (Ground) pin on any low current analog sensor, for example Pressure or Temperature.

- **DO NOT** connect these pins directly to the Engine Block or ED7 Ground. These are dedicated and specialised ground outputs for all analog channels and should be connected directly to the sensor.
- **DO NOT** connect speed-based sensors to this ground, use the 0V Reference Out Pin 13.

RS232

Pin 11 is the ED7 RS232 Transmit Output. As the name suggests this is an output and should be connect to the Receive Input of the wired external device.
Pin 12 is the ED7 RS232 Receive Input. As the name suggests this is an input and should be connect to the Transmit Output of the wired external device.
Pin 13 can be used as the ground reference

Ground Reference Out

This is a protected ground reference for frequency-based signals. It is rated at 1A continuous. For example, this pin can be used as an RS232 ground reference and/or a Speed Sensor ground reference.

Appendix A – Pinout

ED7 Gigabit Ethernet Pinout

LOOKING INTO DISPLAY

Emtron Pin	RJ45 Pin T-568A	Description	Cat5e Wire Colour
18	1	Ethernet Tx/Rx + Pair 1	Green/White
19	2	Ethernet Tx/Rx - Pair 1	Green
26	3	Ethernet Tx/Rx + Pair 2	Orange/White
27	6	Ethernet Tx/Rx - Pair 2	Orange
20	4	Ethernet Tx/Rx + Pair 3	Blue
21	5	Ethernet Tx/Rx - Pair 3	Blue/White
28	7	Ethernet Tx/Rx + Pair 4	Brown/White
29	8	Ethernet Tx/Rx - Pair 4	Brown

NOTE: The AV 0V Ref pin is a specialised ground output for all analog sensors. Connect direct to the sensor 0V pin, **DO NOT** connect to the Engine Block or ECU Ground.

LOOKING INTO DISPLAY

Title: ED7 Pinout

Date: 5/10/2023 | **Revision: 1.0**

Drawing Number: A35

EMtron Australia