

Normally the host board are interfaced with power supply through RJ45 connector. RJ45 connectors are available with or without in-built Data Transformers. In case of in-built, the pin configurations can also vary from manufacturer to manufacturer.

This application note explains about a few techniques of interfacing between the PSE and PD using different RJ45 connectors.

As per IEEE 802.3af specification, the PSEs can deliver power either through the Data Pair (as Medium Data Interface (MDI)) or through the Spare Pair (as Power Interface (PI)). Power injection through Data Pair is called as Mode A, and through Spare Pair is called as Mode B.

There are some particulars in the power sourcing equipment as shown in Table 1 below.

Conductor	Mode A		Mode B Using (PI)
	Using (MDI-X)	Using (MDI)	
1	Negative port	Positive port	
2	Negative port	Positive port	
3	Positive port	Negative port	
4			Positive port
5			Positive port
6	Positive port	Negative port	
7			Negative port
8			Negative port

Table.1 PSE pin out as per IEEE 802.3af

The powered device (PD) should be able to extract power from the PSE as shown in Table 2 below.

Conductor	Mode A	Mode B
1	Positive port or Negative port	
2	Positive port or Negative port	
3	Negative port or Positive port	
4		Positive port or Negative port
5		Positive port or Negative port
6	Negative port or Positive port	
7		Negative port or Positive port
8		Negative port or Positive port

Table.2 PD pin details as per IEEE802.3af

There is in-built 'input reverse polarity protection' in PEM1300 and hence no need for external bridge rectifiers.

PEM1300 interfaced to PSE through standard RJ45 (without Data Transformer)

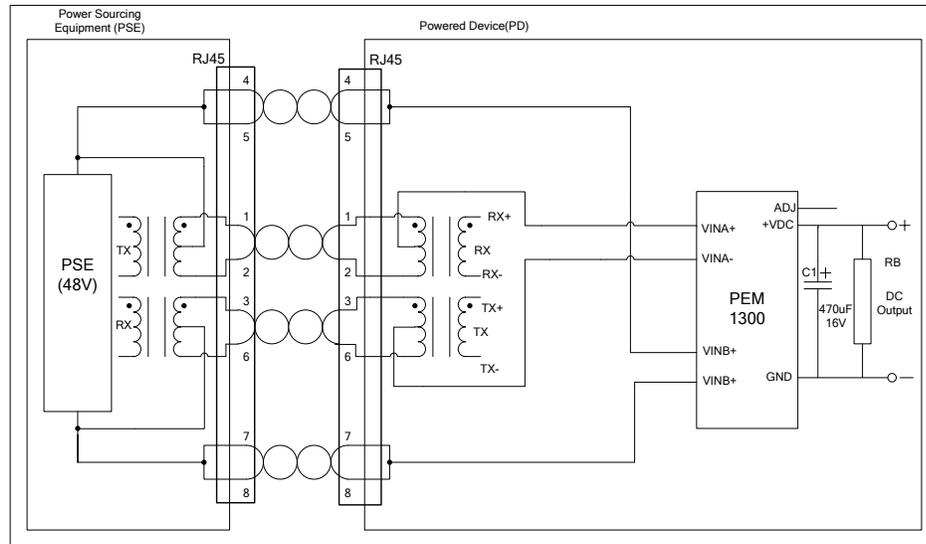


Figure.1 RJ45 connection from PSE to PD

PEM1300 interfaced to PSE through RJ45 with in-built Data Transformer

Within the family of RJ45 having in-built Data Transformer, the manufacturers can have different pin allocations.

Below are a few examples of interfacing PEM1300 with such connectors.

XFMRs make: XFVOIP5E-COMBO-4MS

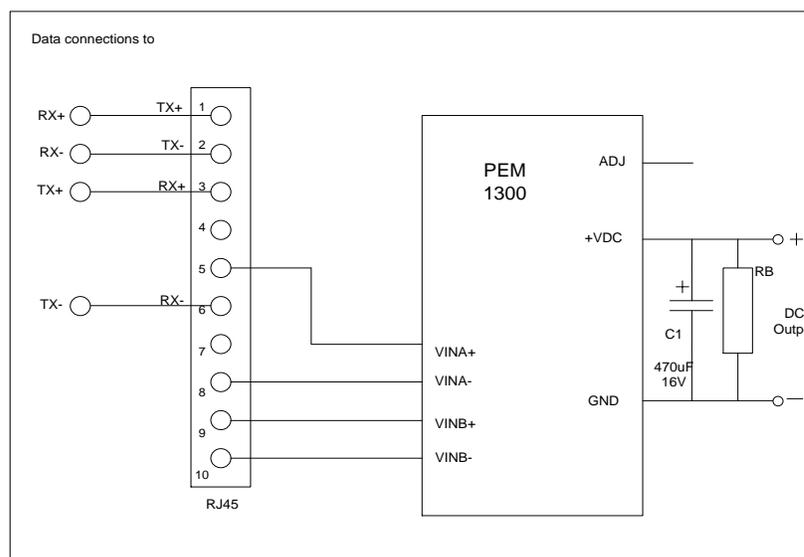


Figure.2 RJ45 of XFMRs "XFVOIP5E-COMBO-4MS"

Bothhand make:PU1T041XA LF

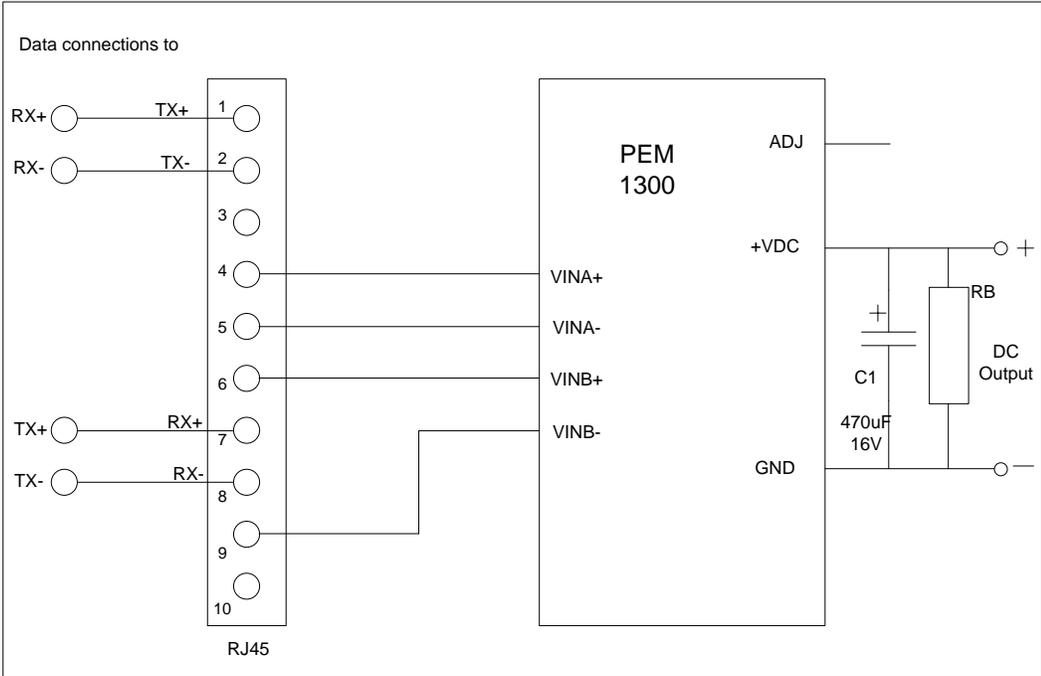


Figure.3 RJ45 of Bothhand "PU1T041XA LF"