

TNET System Cabling

Introduction

The Computerwise TNET data collection network consists of a TNET controller (TIM1B), one or more TNET hubs (TLD2 line driver) and one or more TNET data collection (TT4, TT5, TT6, TT9, TSD1 or TIM2B) devices. These TNET components interconnect using a four (4) pair cable with module RJ-45 jacks. Although the TNET cabling is similar to 10BaseT Ethernet cabling THEY ARE NOT THE SAME. This application note will define how a TNET network should be connected and the type of cabling to use.

Overview

Each TNET system requires a controller (TIM1B) connected to the host computer with a standard RS-232 modem cable. The controller has four (4) identical network ports which typically connect to a hub (TLD2). The hubs are distributed around the facility in convenient locations and can be “daisy chained” together. Up to six (6) data collection devices can be connected directly into each TNET hub. The diagram below (Figure 1) provides a simple example of a typical system topology.

Cable Lengths

Modular TNET cables can be up to 2000 feet in length. Typically, the data collection device receives it’s power from the TLD2 hub which limits the cable length to 100 feet. If the data collection device is provided with it’s own power supply the cable length can be extended to the full 2000 feet.

Cable Specification

All TNET devices interconnect using the same network cable specification. The cable requires 4 “twisted pairs” terminated with an “RJ-45” type plug on both ends. The cable itself can be a low cost “silver satin” flat cable, a four pair round cable (Belden #9504) or a four pair CAT5 cable. The cable pin out is straight through and the signals must be paired as defined in the following table.

Signal Pair	RJ-45 Pin #	TNET Signal Name	RJ-45 Pin #
1	1	+12 Vdc	1
	2	Ground	2
2	3	Txd+	3
	4	Txd-	4
3	5	Rxd+	5
	6	Rxd-	6
4	7	Ground	7
	8	+12 Vdc	8

Table 1

PLEASE NOTE THAT TNET CABLES ARE NOT PAIRED THE SAME AS AN ETHERNET 10BaseT CABLE !

Cable Installation

Typical network cable precautions should be observed when installing TNET cables. Avoid close proximity to electrically “noisy” environments (motors, solenoids, etc.). Do not run cables parallel with power mains. If cables are to be located in an open plenum then use plenum rated cable (Belden 89504). Cables should always be tested after assembly to insure good connectivity. (Note: passing a pin-to-pin continuity test does NOT guarantee proper signal pairing.)

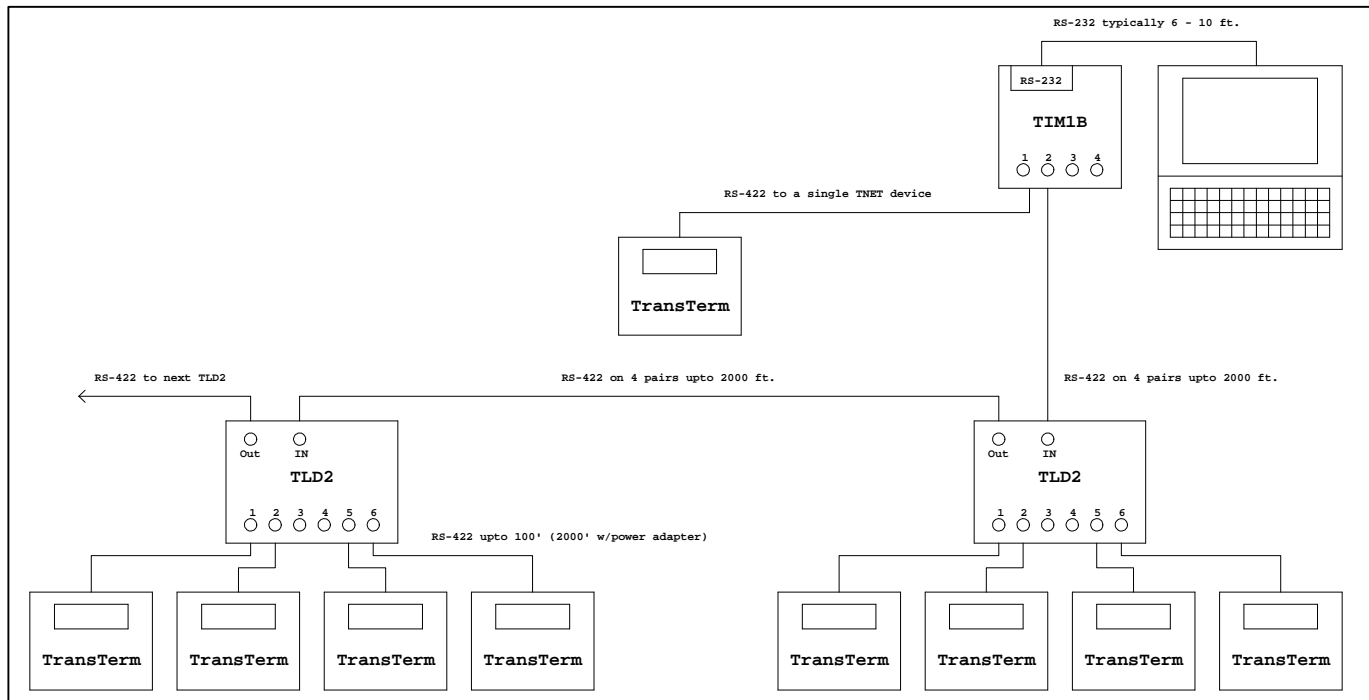


Figure 1