

Project for real time data analytics on paper line that uses Toshiba T3 CPU (PU326H)

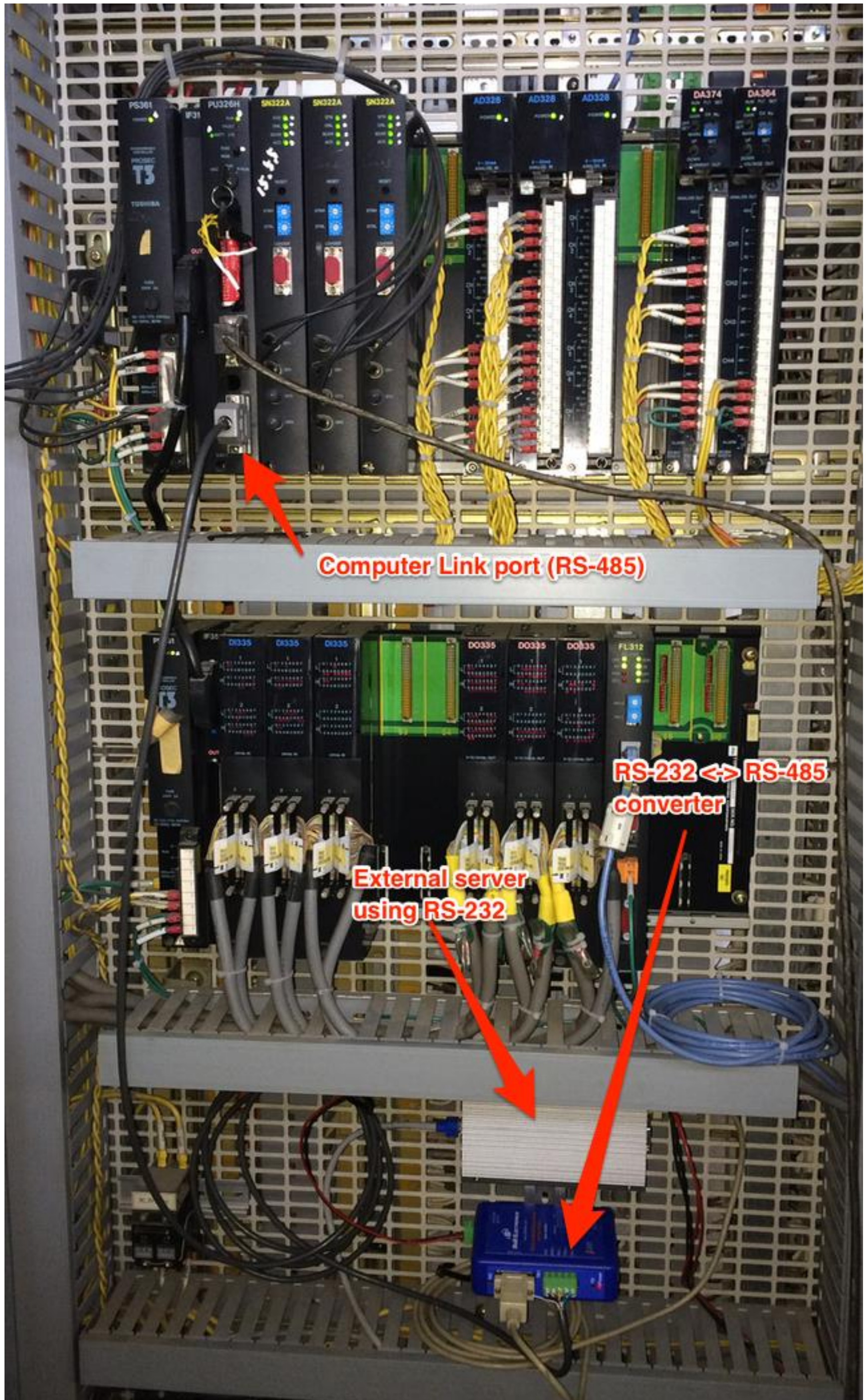
The goal of this project is to extract real time data a paper manufacturing line.

This line is controlled by a Toshiba Prosec T3 CPU (PU326H).

The line is interfaced to an external server via the Computer Link (RS-485) port.

That server request data on a real-time basis (line speed, motor load, motor temperature, ...).

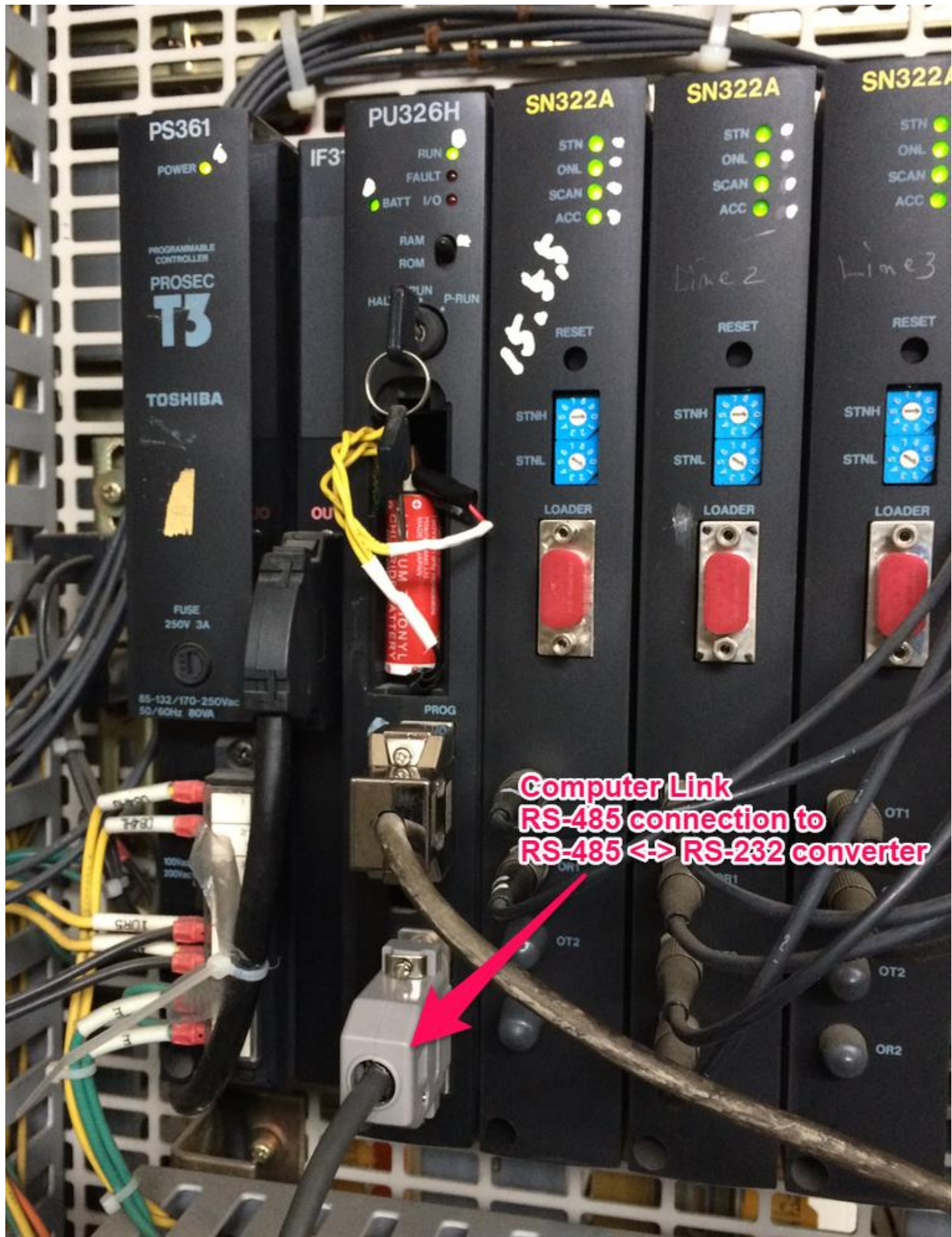
PROBLEM: the Toshiba PLC CPU is not responding to the server's requests



Computer Link port (RS-485)

**RS-232 \leftrightarrow RS-485
converter**

**External server
using RS-232**



**Computer Link
RS-485 connection to
RS-485 <=> RS-232 converter**

**RS-485 ↔ RS-232
converter**

+ |
10-48 VDC
@ 0.2A

B&B ELECTRONICS
www.bb-elec.com

RS-232 to RS-422/485 Converter
with Triple Isolation

Model 485DRCI

RS-232

GND
RDB(+)
RDA(-)
TDB(+)
TDA(-)

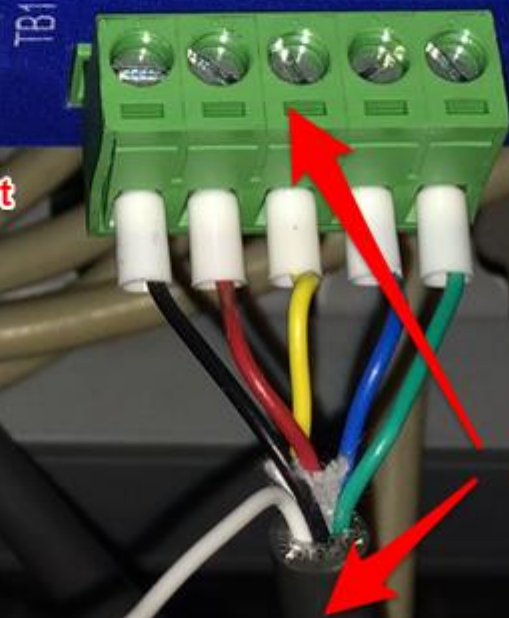
Switch	On	Off
1	TX Send Enable	TX Send Disable
2	RX Send Enable	RX Send Disable
3	2 Wire	4 Wire
4	2 Wire	4 Wire
5	Term. In	Term. Out
6	TX Bias On	TX Bias Off
7	RX Bias On	RX Bias Off
8	2400 Baud	4800 Baud
9	4800 Baud	9600 Baud
10	9600 Baud	19.2k Baud
11	19.2k Baud	38.4k Baud
12	Down position	Up position



RD



**Connected to
server via RS-232 port**

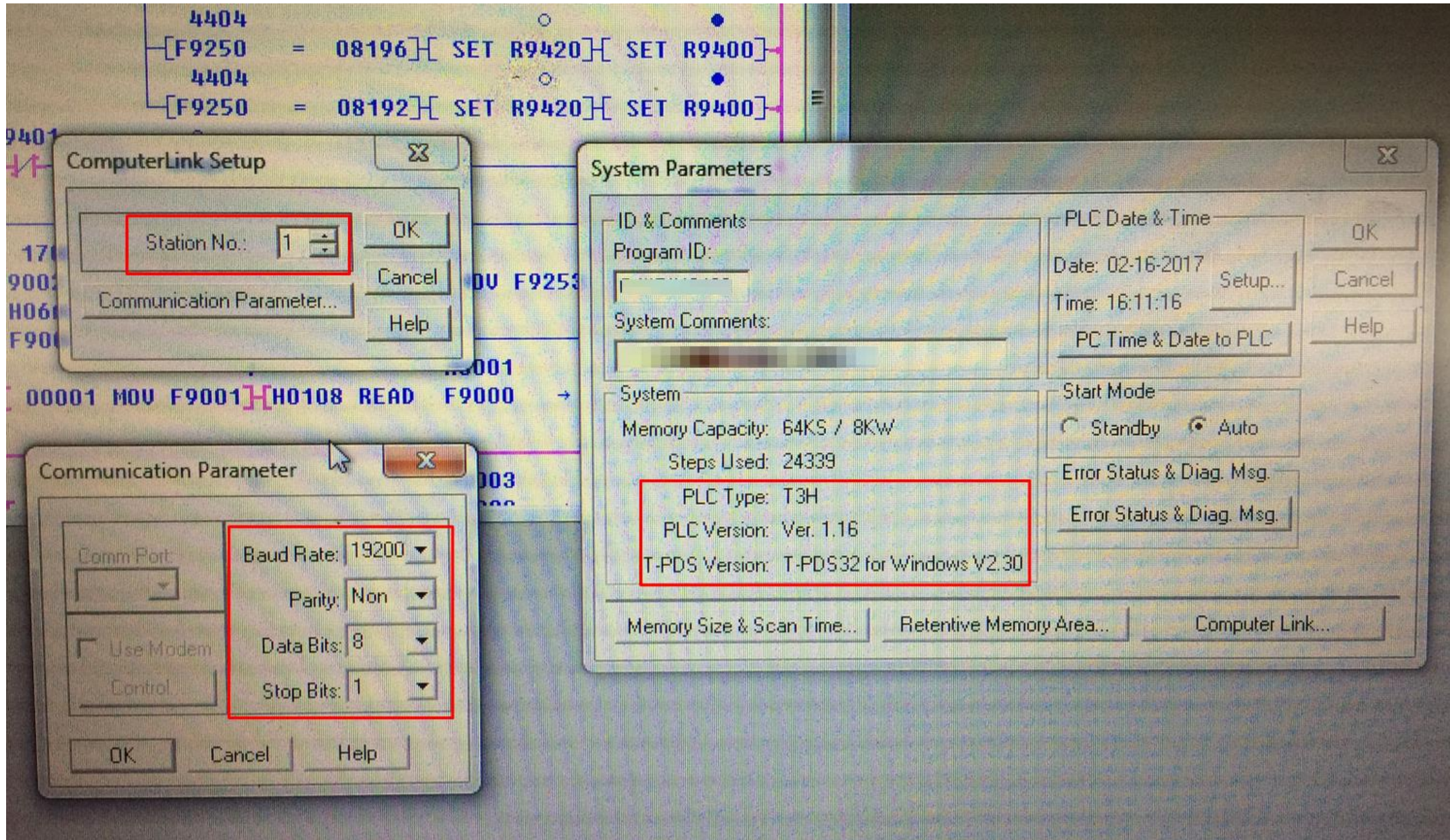


**Connected to Computer Link
port via RS-485**

TD

Power

Configuration settings on T-PDS32 (v2.30)



Sending data for testing connectivity
19'200 bits/sec, 8 data bits, NO parity, 1 stop bit

CR = carriage return = '\r' = 0x0D = carriage return code = 1 byte

Test (TS)

Send (A01TS123456789-TEST-123456789)**CR**

Response *nothing!*

PLC Status Read (ST)

Send (A01ST)**CR**

Response *nothing!*

System Information 1 (SR)

Send (A01SR)**CR**

Response *nothing!*

System Information 2 (S2)

Send (A01S2)**CR**

Response *nothing!*

Clock-calendar Read (RT)

Send (A01RT)**CR**

Response *nothing!*

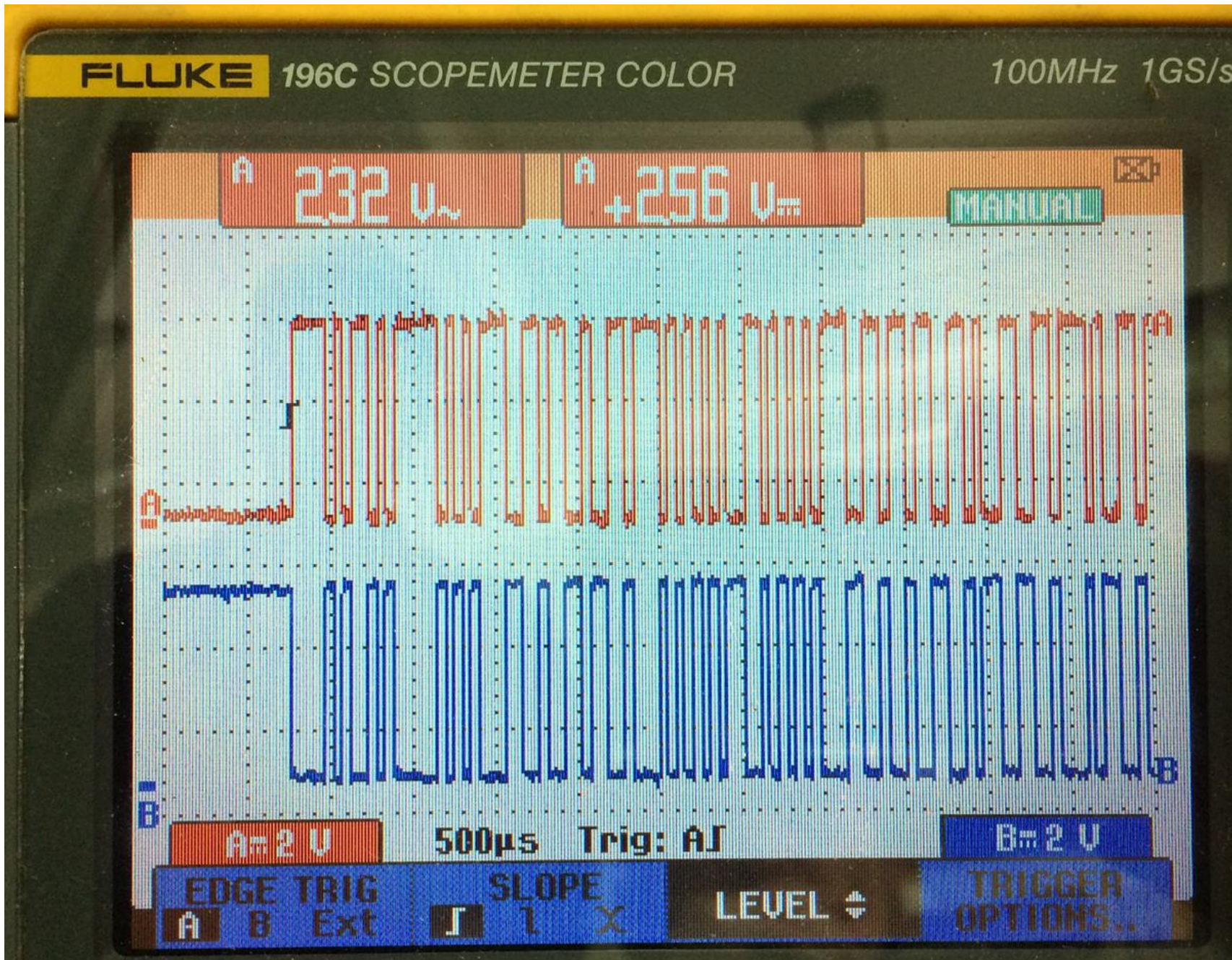
Data Read (DR)

Send (A01DRF5248)**CR**

Response *nothing!*

Problem: The PLC CPU (PU326H) is not sending any data back. The request always times out (no data received at all).

RS-485 signals (port 2 + port 10 on Computer Link DB-15 connectors) look “normal”



Pin No.	Signal name
1	FG
2	RXA
3	TXA
4	CTSA
5	RTSA
7	SG
10	RXB
11	TXB
12	CTSB
13	RTSB

