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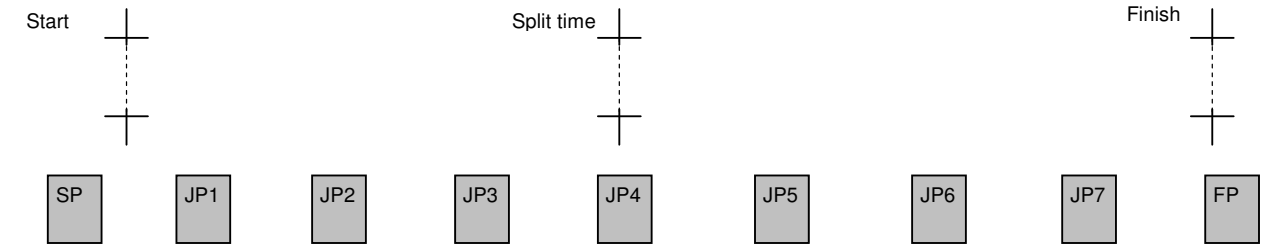
Date	Version	Change
08Mrt2007	0.1	First draft
15Mrt2007	0.2	review verwerkt
14Aug2007	0.3	Situatie aug 2007, kastjes aansluitschema's toegevoegd
28Okt2007	0.4	Geactualiseerd naar okt 2007
12Jan2008	0.5	Baankabel informatie toegevoegd
26Feb2008	0.6	Actualized to Feb 2008 (single Timy cables)

DWD Timing system Cable network

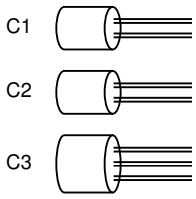
1. Introduction

This document describes the Dutch Water Dreams cable network for the canoe slalom timing system. In this configuration the timing office is located at the finish.

2. Network configuration February 2008

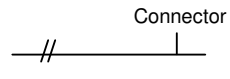


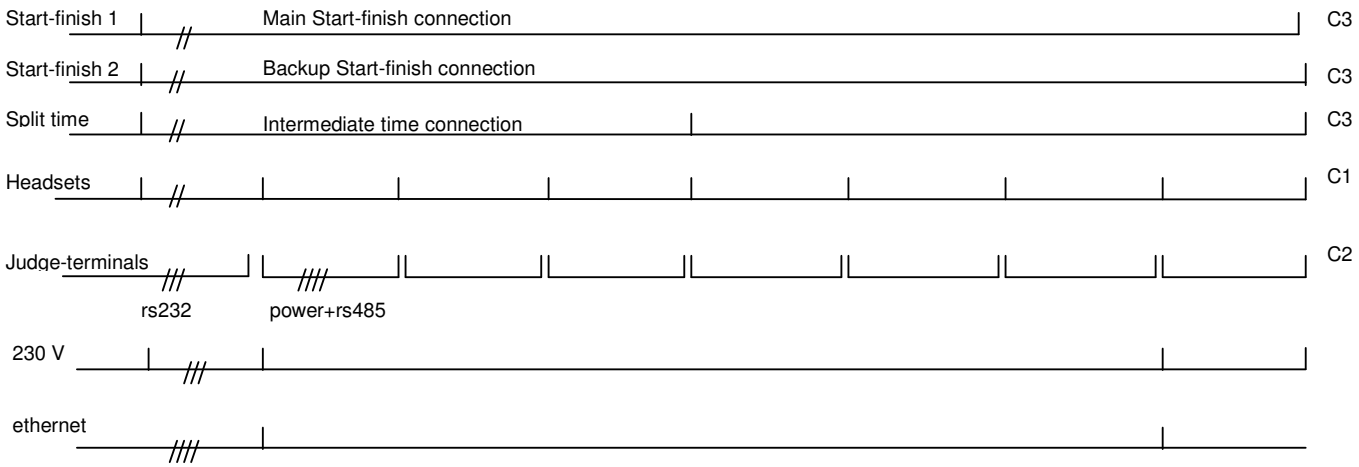
The timing network consists of 3 cables along the white water course:



C1	red-blue:	headsets
	yellow-green:	spare
C2	red-blue:	Timy terminal - power (+ -)
	yellow-green:	Timy terminal rs485
C3	red-blue:	Start-finish 1
	yellow-green:	Split time
	white-white:	Start-finish2

Legenda:
SP - Start patch box
FP - Finish patch box
JP - Judge patch box



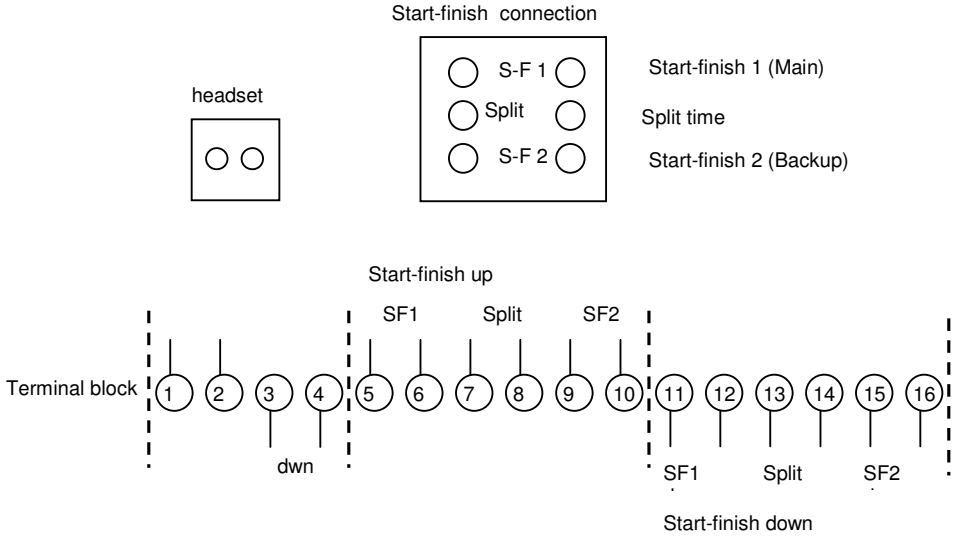


3. Wiring schemas patch boxes

Legenda

up	upstream
dwn	downstream
SF1	Start-finish verbinding 1
Split	Tussentijd verbinding
SF2	Start-finish verbinding 2
M	male plug Timy terminal
F	female plug Timy terminal
D9	9-pins D connector
SP	Startpost
TP	Telpost

3.1. SP - Start post



Terminal block wiring

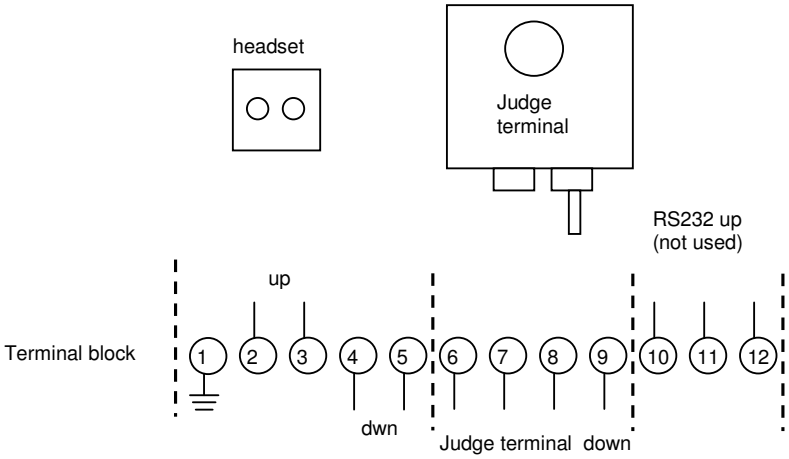
SP

Startpost

nbr	description	lead
1	headset up	red
2	headset up	blue
3	headset down	red
4	headset down	blue
5	Start-finish 1 up	red
6	Start-finish 1 up	blue
7	Split time up	yellow
8	Split time up	green
9	Start-finish 2 up	white
10	Start-finish 2 up	white
11	Start-finish 1 down	red
12	Start-finish 1 down	blue
13	Split time down	yellow
14	Split time down	green
15	Start-finish 2 down	white
16	Start-finish 2 down	white

The Up cables are fed into the building. They are not used currently.

3.2. TP1 - Telpost kastje 1 - Judge post 1



TP1

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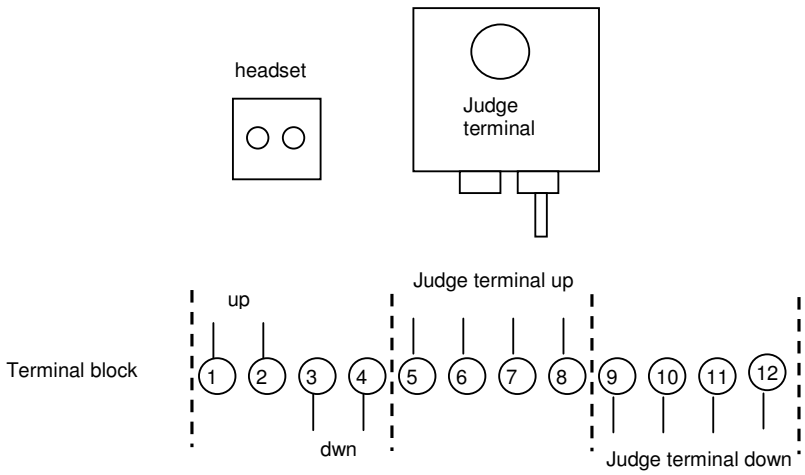
TP1 - Judge post 1

nbr	description	lead
1	ground	empty
2	headset up	red
3	headset up	blue
4	headset down	red
5	headset down	blue
6	JT +Ua down	red
7	JT Gnd down	blue
8	JT RS485A down	yellow
9	JT RS485B down	green
10	JT RS232 up (not used)	red
11	JT RS232 up (not used)	blue
12	JT RS232 up (not used)	yellow

TP2

3.3. Telpost kastjes / Judge post 2, 3, 5, 6, 7

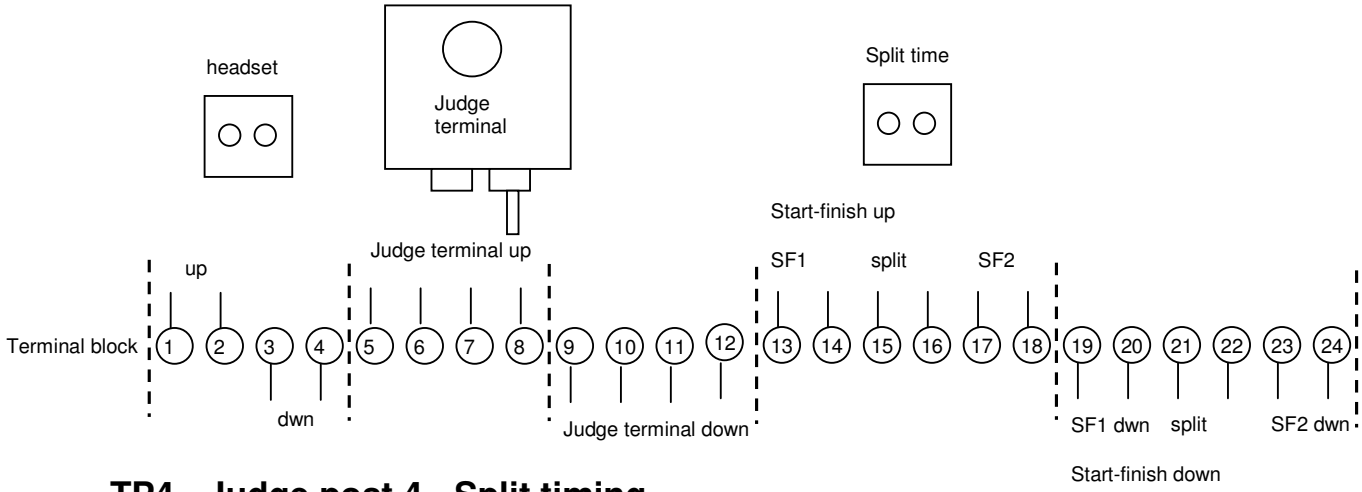


Wiring of TP2, 3, 5, 6, 7 is identical.

TP 2 - Judge post 2

nbr	description	lead
1	headset up	red
2	headset up	blue
3	headset down	red
4	headset down	blue
5	JT +Ua up	red
6	JT Gnd up	blue
7	JT RS485A up	yellow
8	JT RS485B up	green
9	JT +Ua down	red
10	JT Gnd down	blue
11	JT RS485A down	yellow
12	JT RS485B down	green

3.4. Telpost kastje 4, tussentijd / Judge post 4, Split time

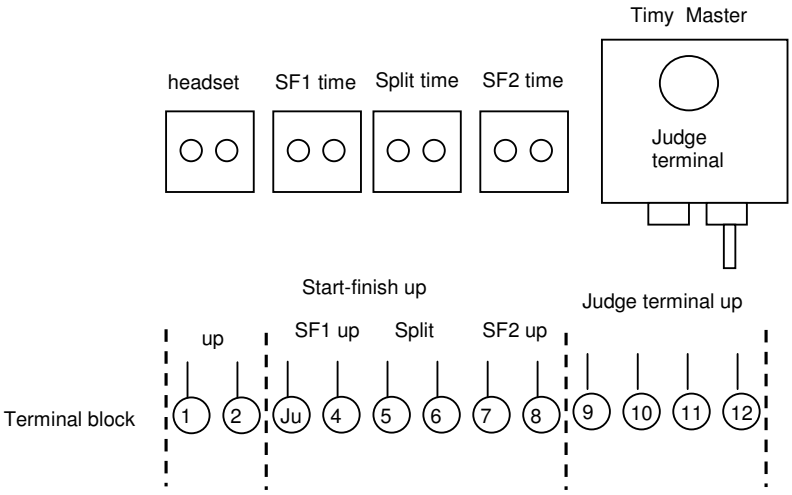


TP4 - Judge post 4 - Split timing

nbr	description	lead
1	headset up	red
2	headset up	blue
3	headset down	red
4	headset down	blue
5	JT +Ua up	red
6	JT Gnd up	blue
7	JT RS485A up	yellow
8	JT RS485B up	green
9	JT +Ua down	red
10	JT Gnd down	blue
11	JT RS485A down	yellow
12	JT RS485B down	green
13	Start-finish 1 up	red
14	Start-finish 1 up	blue
15	Split time up	yellow
16	Split time up	green
17	Start-finish 2 up	white
18	Start-finish 2 up	white
19	Start-finish 1 down	red
20	Start-finish 1 down	blue
21	Split time down	yellow
22	Split time down	green
23	Start-finish 2 down	white
24	Start-finish 2 down	white

TP4

3.5. FP - Finish post



FP

FP - Finish post

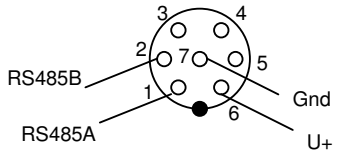
nbr	description	lead
1	headset up	red
2	headset up	blue
3	Start-finish 1 up	red
4	Start-finish 1 up	blue
5	Split time up	yellow
6	Split time up	green
7	Start-finish 2 up	white
8	Start-finish 2 up	white
9	JT +Ua up	
10	JT Gnd up	
11	JT RS485A up	
12	JT RS485B up	

4. Judge Terminal cables

The standard Alge supplied Timy terminal cables have been replaced by customized cables. The reason for this was that the cables were to short (5 mtr in place of required minimal 10 mtr), had two legs, and a connector that caused that the door of the patchbox could not be closed when the cable was plugged in.

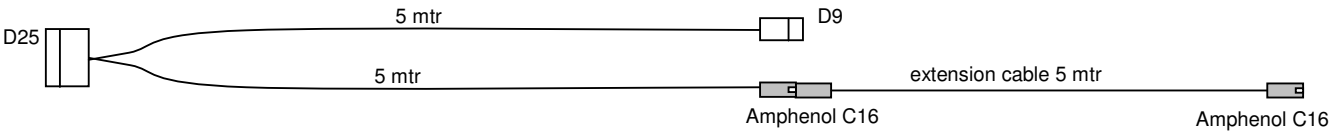
Currently, the Master terminal cable has been kept, but is extended by 5 mtr.

Pin configuration Amphenol C16-1 7 pol. plug:



Amphenol C16
view Male pinside

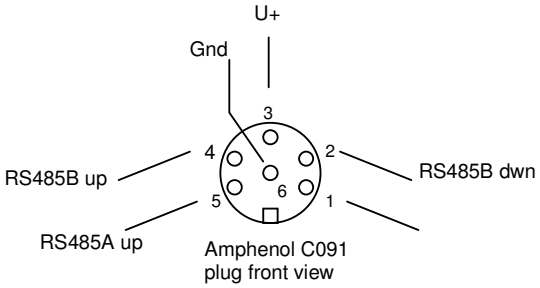
Timy Master (1x)

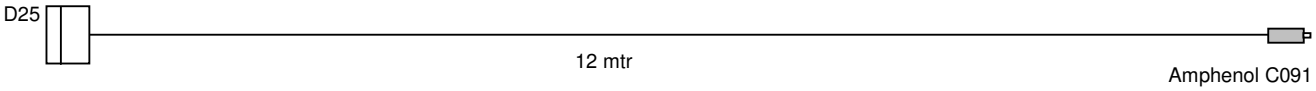


The master cable has a power feed and a termination resistor.

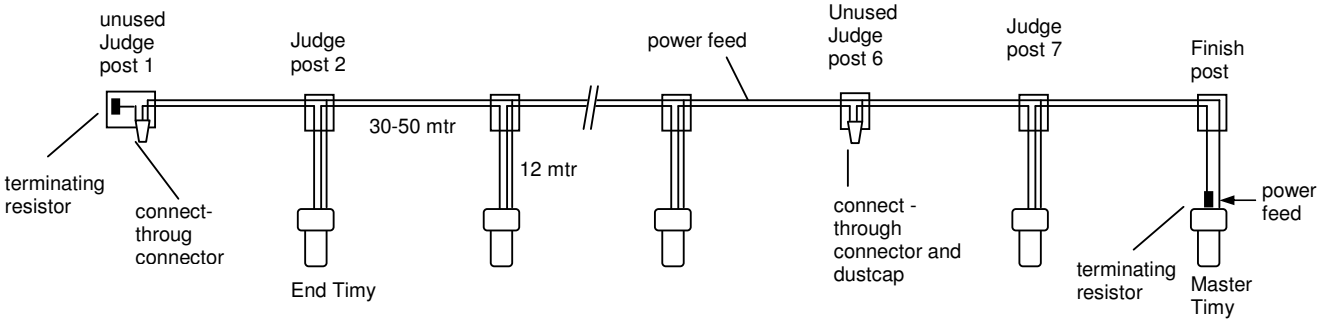
Timy Terminal (7 x)

The termination on the upper side of the rs485 chain is in the Judge post 1.





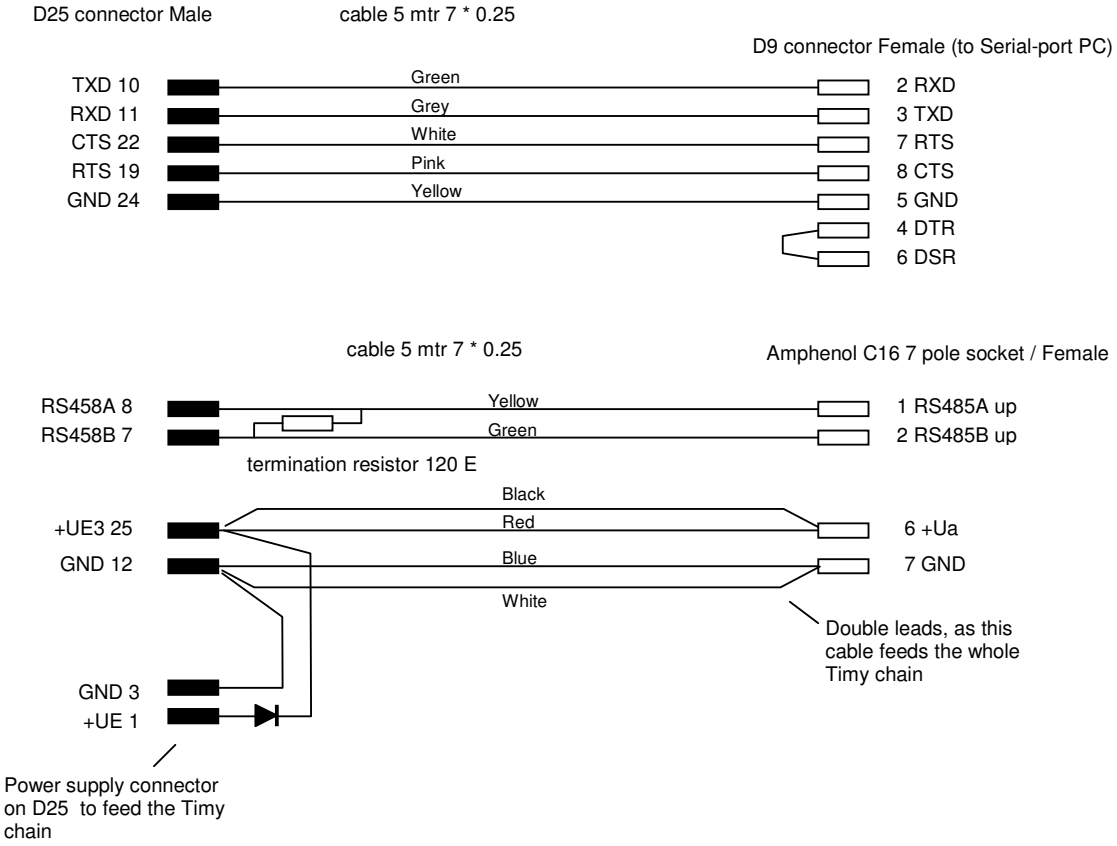
The figure below shows how the Timy terminals are arranged into a rs458 chain. ('unused judge post' just by example to demonstrate the use of the connect though connector.)



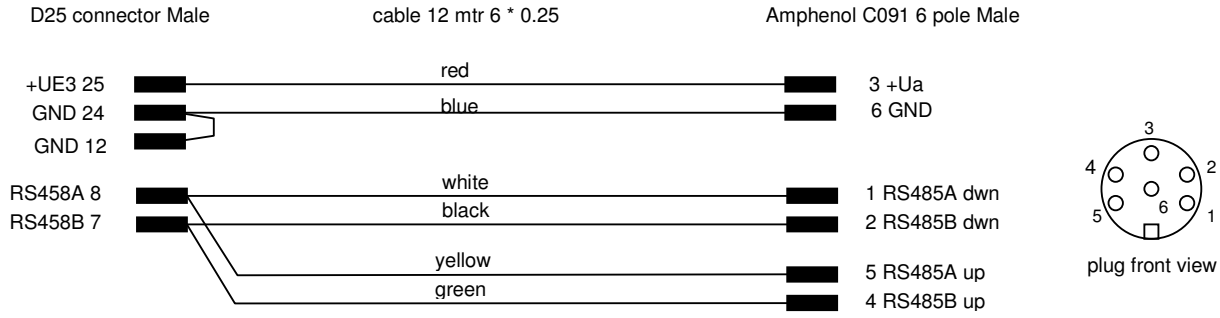
5. Judge terminals cable wiring

Up and Dwn refer to downstream or upstream direction of the cable, relative to the water flow of the white water course.

5.1. Cable Master Timy (standard Alge)

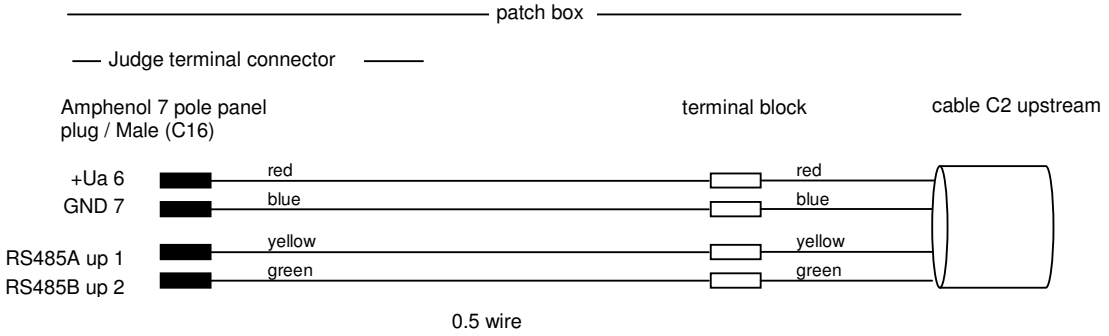


5.2. Cable Timy-terminal (custom build for DWD)

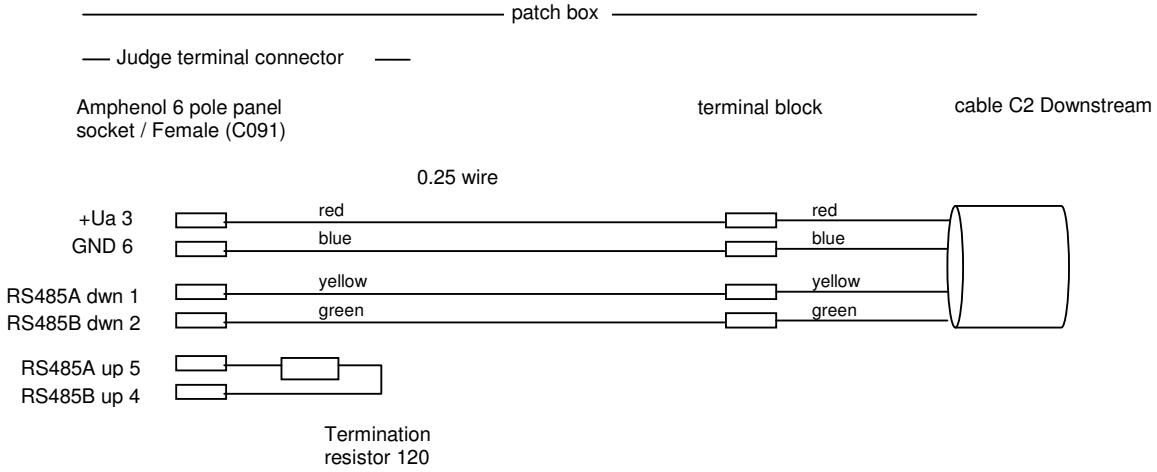


5.3. Judge terminal connector in Finish post

The Judge terminal connector at Finish post is left unchanged.

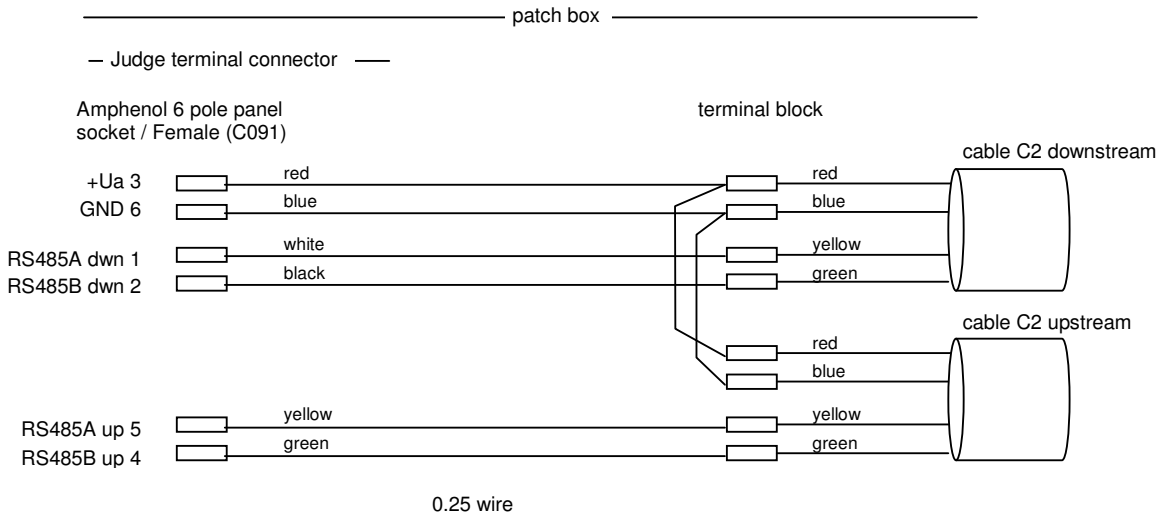


5.4. Judge terminal Connector Judge post 1



5.5. Judge terminal connector in intermediate patchboxes (JP2 - JP7)

The rs485 feeding direction is from downstream to upstream the the white water course.



5.6. Connect-throug plug & dustcap

In patch boxes that are not used, the rs485 chain need to be connected through. The plug for this also functions as a dustcap when the network is not operational.