Engineering Note: Sensor Cable Wiring Information (Hydronix Part no. 0975)

Summary:	Connection information for wiring Hydronix probes and sensors
Products affected:	Hydro-Mix VII (HM07), Hydro-Probe Orbiter v2,(ORB2), Hydro-Probe XT (HPXT), Hydrotrac (HT03) models only
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Contents

1 Summary

Note: This engineering note refers only to the models specified above. Connection information for all other models can be found on Engineering Note EN0035.

The 4m Sensor Cable (part no 0975) has been designed to take the place of the existing standard sensor wiring cable (0090A). It is designed to ease connection of future Hydronix sensors which incorporate two Analogue Outputs with a common ground. The cable is also compatible with sensors which only have one Analogue Output.

The cable enables easy connection of equipment and has the advantage of making the RS485 signals available in the control room, regardless of whether they are to be used. This allows the user to be able to adjust the parameters of any sensor using Hydro-Com software. The cable also permits the use of a second analogue output where it is supported by the sensor.

2 Connection information

Using a sensor in compatibility mode requires the addition of a 500Ω resistor (supplied) to be connected between the 1st analogue common (output) and the 1st analogue return. Once the sensor is set to compatibility mode, this will produce the correctly characterised 0 – 10 V signal to allow the Hydro-Control IV or Hydro-View to operate while still allowing the RS485 access and configuration. The same method is used if the user wishes to convert the 0 – 20mA output to linear 0 – 10V (with the sensor set to 0 – 10V output type using Hydro-Com software).

Twisted Pair Number	MIL spec pins	Sensor & Probe connections	Cable colour
1	A	+15-30V DC	Red
1	B	0V	Black
2	C	1st Digital input	Yellow
2	--	-	Black (Cut back)
3	D	1st Analogue Positive (+)	Blue
3	E	1st Analogue Return (-)	Black
4	F	RS485 A	White
4	G	RS485 B	Black
5	J	2nd Digital input	Green
5	--	-	Black (Cut back)
6	K	2nd Analogue Positive (+)	Brown
6	E	2nd Analogue Return (-)	Black
	H	Screen	Screen

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It is recommended that the cable is connected, using a sealed junction box with secure protected connections, to a cable of similar type (see Cable Specifications). The junction box should be of a metal construction and bolted to a metal framework. If it is not possible to secure the box to framework, then the box must be earthed.

Cables should be placed as far away from Equipment or Mixer power cables as possible to reduce signal interference.

The two analogue outputs are current sources and use a common negative.

3 Cable Specification

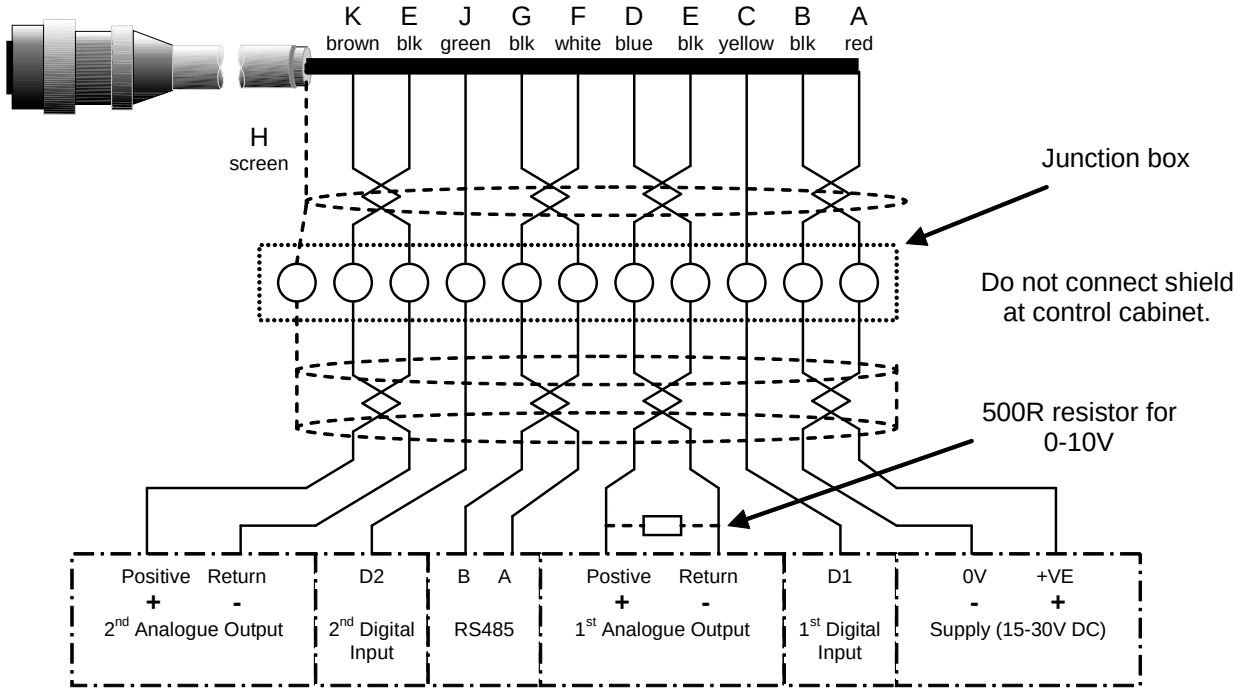
Six twisted pairs: (12 cores total) screened (shielded) cable with 22 AWG, 0.35mm^2 conductors.

Screen (shield): Braid with 65% minimum coverage plus aluminium/polyester foil

Maximum cable run: 100m, separate to any heavy equipment power cables.

Cable Type	Manufacturer	Manufacturer Part Number
6 twisted pair PVC insulated cable	Belden	8306
6 twisted pair PVC insulated cable	Alpha	6377
6 twisted pair PVC insulated cable	General Cable	CO654
6 twisted pair PVC insulated cable	Electrocables	538225685TFT4

4 Wiring Diagram



Control Room Wiring

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