

## QUICK START GUIDE: HydraProbe Soil Moisture Sensor

### HydraProbe Basic SDI-12 Communication (2.9 Firmware)

Note: It is recommended to keep the HydraProbe on its defaults and use only the "aM!" or "aC!" to retrieve data.

SDI-12 (serial data interface at 1200 baud) communications protocol allows compatible devices to communicate with each other.

#### SDI-12 Wiring Information

The SDI-12 HydraProbe has three wires. The default address is "0".

Wiring and Power for SDI-12	
Power Requirements	9 to 20 VDC (12VDC Ideal)
Red Wire	+Volts Power Input
Black Wire	Ground
Blue Wire	SDI-12 Data Signal
Power Consumption	<1 mA Idle, 10 mA for 2s Active

Table A1. Digital SDI-12 HydraProbe Information.

#### Addressing an SDI-12 Sensor

It is important to note that each SDI-12 sensor must have its own unique address. The default address for the HydraProbe is "0". Use SDI-12 "Transparent Mode" to issues commands.

Command Feature	SDI-12 Command
Change Address	aAb!
Get Probe's serial number and ID	aI!
Take a Reading	aM! Follow by aD0!, aD1!,aD2!

Table A2. Common SDI-12 Commands

Common Measurement Command sets for aM! And aC!			
Parameter ordering	Parameter	Unit	Letter designation (See table)
Parameter 1	Soil Moisture	Water fraction by volume	H
Parameter 2	Bulk Electrical Conductivity with Temperature Correction	S/m	J
Parameter 3	Temperature	C	F
Parameter 4	Temperature	F	G
Parameter 5	Bulk Electrical Conductivity	S/m	O
Parameter 6	Real Dielectric Permittivity	Unitless	K
Parameter 7	Imaginary Dielectric Permittivity	Unitless	M

Table A3. Common Commands

12.8 and 2.7 firmware versions have a different array of C commands. Contact Van Walt Ltd for more information.