

Technote 17 - Pulse Input Sensitivity

Pulse inputs

Many Obvius products have pulse input terminals. These terminals are designed to detect contact closures on meters (power, water, gas, etc). In an ideal world, a contact would have close to zero ohms of resistance when closed. In reality, meters usually have between 10 and 100 ohms of resistance when closed.

The input sensitivity of a pulse input is determined in part by the microprocessor that is reading the terminals, the pull up resistor and voltage applied to the terminals. As shown below, the allowable "closed" state resistance varies between products.

Product	cpu	max V	max R
A8923-4 old:	AT90S	1.98v	1.49k
A8923-4 new:	ATMEGA	1.15v	504 ohms
A8332-8F2D FlexIO:	LPC21xx	-	1k default. (User Selectable.)
A8911-23 HD Pulse:	LPC21xx	-	500 ohms default. (User Selectable.)
R9120 ModHopper RevA:	LPC21xx	1.28v	320 ohms
R9120 ModHopper RevC:	LPC21xx	-	500 ohms default. (User Selectable.)
A7801 AcquiLite:	Rabbit		600 ohms (note, led turns on below 1k ohms)
A8811 old:	AT90S	1.95v	1.28k
A8811 new	ATMEGA	1.22v	544 ohms
A8812 AcquiSuite	LPC21xx	-	1K default. (User Selectable.)

MaxV is the measured voltage across the pulse-input/gnd terminals when Max R is connected
Max R was the highest measured resistor that could be detected as a contact closure.

Intrinsic Barriers

Devices such as intrinsic barriers often add a substantial amount of resistance to the circuit. It may be the case that an interposing relay be required to allow an intrinsic barrier to operate with a pulse input on some systems.