

Technote 109 Cable Types and Max CT Wire Lengths

Revised: 11/13/2017

Purpose: To identify typical wire recommendations and maximum lengths for the wide variety of cables used with Obvius devices.

Communication Cable Types/Lengths: The following is a compilation of cable specifications used with Obvius data acquisition products and meters. In addition to the specifications below, all cables entering electrical panels must have insulation ratings meeting or exceeding the service voltage. All installations must conform to any applicable electrical and building codes.

Table 1: Cable Type Lengths

Connection Type	Wire Type	Max Length (ft/m)
RS-485 ¹	Belden 1120A or equivalent	4000 / 1219.2
Ethernet	CAT5/5e/6 (shielded cable recommended for noisy environments)	328 / 100
Analog Inputs (0-10 V, 4-20 mA, Pulse, Resistance)	18-24 AWG (shielded cable recommended for noisy environments)	200 / 60.9
USB for modem	USB 2.0	16 / 4.8

CT Wire Extensions: The below specifications are applicable to Leviton/Obvius equipment only. If 3rd-party equipment is used, please refer to the specific manufacturer's specifications and use the shortest length recommended.

Standard lead-length for the split-core CT is 36 inches or 0.91 meters. Overall, maximum lead-length allowed for CTs are shown below:

Table 2: Meter CT Wiring Lengths

Meter Series	Manufacturer	CT Type/Ratio	CTs Max Combined Length ² (ft/m)
MiniMeters	Leviton	Split or Solid Core/0.1A	500 / 152.4
Series 1000			
Series 2000			
Series 8000			
Series 4000/4100K			
Series 4000/4100R	Obvius	Rope/Rogowski	20 / 6.0
AcquiSuite+ (A8814)		Split/0.333V	100 / 30.4

¹ RS-485 protocols Modbus RTU and BACnet MSTP.

² Wires used for extending CT length should match the CTs' wire gauge and applicable rating.