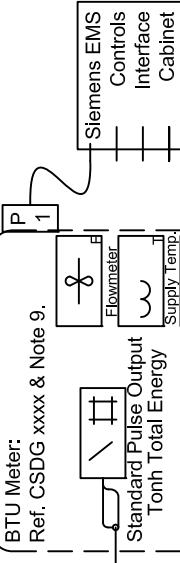
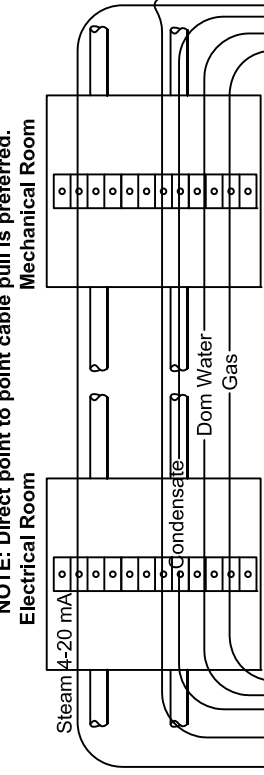


LOAD

System Current Transformer Connection:
CT Rating to match Max. system load.
(CT Ratio: xxxx:5)
See Note 5.

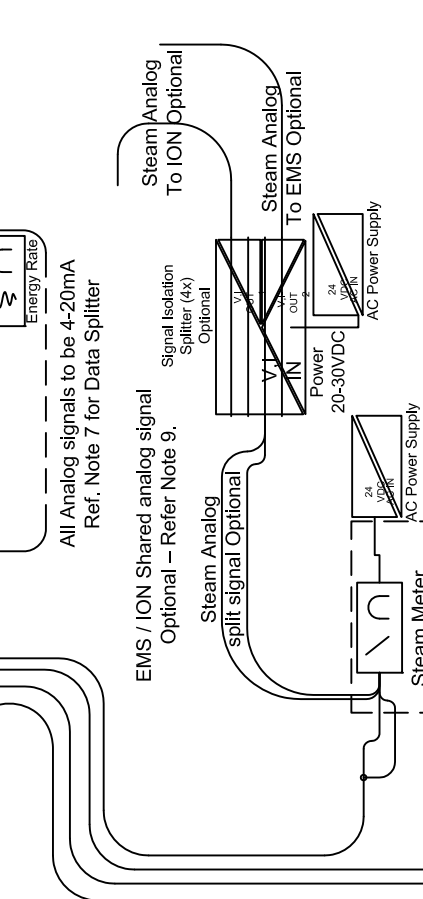
Utility Meters junction box interface.
minimum 6"x6"x4" with hinged door & 3/4" Conduit
NOTE: Direct point to point cable pull is preferred.

Electrical Room
Condensate
Dom Water
Gas

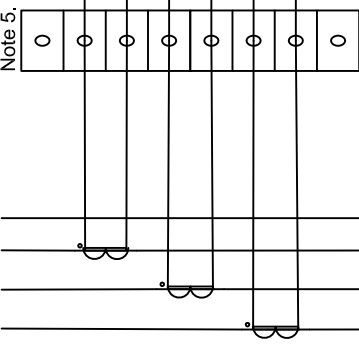


BTU Meter:
Ref. CSDG xxxx & Note 9.

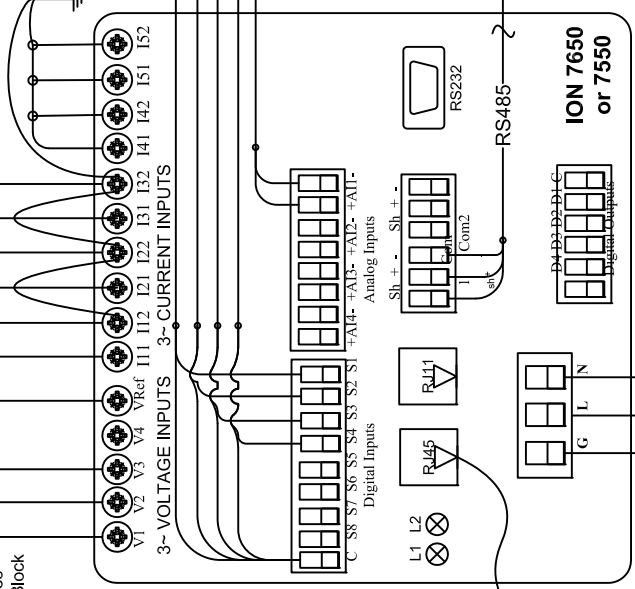
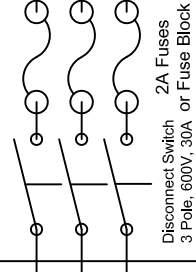
All Analog signals to be 4-20mA
Ref. Note 7 for Data Splitter



CT Shorting Block
Note 5.



Refer to Note 6.



ION meter Digital Inputs, has Internal 30 VDC Supply

To Next ION meter
Ref. note 7.

ION 7650 or 7550

Service outlet required for laptop connection.

120/208 VAC only

See Note 10.

LINE

ION Meter: Typical Digital & Analog Connection Schedule	
Digital Inputs (Pulse):	Analog Inputs (4-20 mA):
S1 = BTU Energy Total (Ton)	A11 = Steam rate
S2 = Steam Pulse or Condensate	A12 = Open
S3 = Domestic Water	A13 = Open
S4 = Natural Gas	A14 = Open
S5 =	
S6 =	
S7 =	
S8 =	
S9 =	
S10 =	
S11 =	
S12 =	
S13 =	
S14 =	
S15 =	
S16 =	

NOTES:

- 1.) Communications: Connect the main device to the Campus Network through a Data NAM installed in the electric meter compartment. For building with more than 1 electric meter use RS485 serial connections between each meter for COM. Leave one end of each shielded cable run OPEN.
- 2.) Refer to CS&DG standard Division 26, Power Monitors
- 3.) Refer to CS&DG standard Division 33, for Utility meters, sub meters, circuit meters, etc.
- 4.) For the Power Meter Wiring schematic refer to the manufacturers installation manuals for the proper installation & configuration. Typically UC Davis uses a 4 Wire Wye: 3 Element Direct Connect
- 5.) For the CT's, the common lines can be jumped at the shorting block or on the Power Monitor (Preferred). (Common Lines: I12, I22 & I32...). The Shorting Block must be accessible from a front panel near the Power Monitor and should be grounded.
- 6.) System Voltage Input Connection (Direct): Max. 347 VAC LN (600 VAC LL) Typical connection 277/480 VAC **NOTE:** PT's are required only for voltages OVER 347 LN (600 LL)
- 7.) Serial cable: RS485 20-24 AWG, shielded Twisted Pair. Single or Multiple meter connection. Multiple meters to be wired in series (Daisy Chain) with a terminating resistor at the end of a Straight line Topology. (No terminating resistor required for a Loop Topology). Ground Shield to Pin 7 on the RS485 - Ethernet converter and leave open at first meter. From the first meter connect ground and leave open next downstream meter and repeat for all subsequent meters. If only one meter is installed, DO NOT ground the Shield at the meter.
- 8.) Only use Data Splitters on BTU metering system or steam meter outputs for sharing data signals from Flow, Tin, Tout instruments to more than one system like EMS, Johnson, Honeywell... Signal splitters can be installed before input to the BTU system or from the output from the BTU system. For just Utilities & EMS no splitter is required.
- 9.) Preferred BTU metering systems: FLEXIM-Fluxus AND 7407 or ONICON System 10 P1. Both units must have 4 Optional Analog Outputs. Analog Outputs as shown above (Flow, Supply Temp, Return Temp & Energy Rate). Include a P1 option for the Onicon System 10-P1 Output Options: for connection to buildings with Siemens controls.
- 10.) Power Meter input supply power is 95 - 240 VAC. Power greater than 240 VAC requires a transformer.
- 11.) Free standing Power Meter enclosures shall be lockable.

UNIVERSITY OF CALIFORNIA, DAVIS

BUILDING ELECTRICAL METER AND UTILITY METERS CONNECTION DIAGRAM - ION 7550/7650

REVISION: 0

SCALE: NONE DATE: JULY 2011

DWN: AE APPROVED FILE NO. E-04

CHK: ES