MACQUARIE University

Commissioning Methodologies (CM) – MUBS-21 Water Meter Pulse Type Testing Method Statement

Client:	Project Name:		Project No:	
Area:	Drawing No's:	Date:		Sheet: 1 of 3
Check Conducted By:	Signature:	Check Approved By:	Signature:	

INTRODUCTION

HLI – High Level Input: (Water Meter Pulse Type)

The on-site commissioning procedure aims to check the operation of a Water Meter Pulse Type HLI to verify their wiring and operation.

For each point, a change of flow of the equipment should be simulated or produced, and the monitoring function of the Systems is be verified on the software online tool. For each control point, the corresponding equipment's should be controlled by the software online tool to manually command outputs to be driven to the desired value. The following procedures describe the best practice steps to commissioning each device to verify its correct operation.

It is expected that the point's lists are used to record the results of the point to point commissioning.

Procedure recommended general checks

1. Visibly check installation against approved shop drawings (size, type, model etc.)
2. Check that general construction and standard of finish is acceptable
3. Record name point information and compare against the approved specification
4. Check the Water Meter has been commissioned by the hydraulics contractor
5. Check that the BMCS wiring between the Meter and the BMCS is complete
6. Using a magnet activate (or short circuit the output of the meter) the reed switch up to 5 times
7. Confirm the meter pulse value for each meter (use test sheet over two time periods)
8. Confirm the meter point on the BMS accumulates to the same value of simulated pulses
9. Offset the BMCS display reading to match that of the meter accumulated value (to allow future comparison and calibration)
10. Sign off on **Point to Point Sign Off Sheet** (use test sheet over two time periods)

Procedure recommended for testing operation

Each test should be performed in both manual and automatic modes.

1. Record the water meter current display on test sheet as well as the current BMCS value as well as the product data listed pulse count rate.

If the Water Meter Pulse Type does not display the desired value then an offset should be recorded in the BMCS

and commissioning schedule/inspection and test sheets

2. Operate the water being monitored with the assistance of the hydraulics contractor (for at least 2 pulse counts). Verify the value of the BMCS Water Meter Pulse against the meter display to verify the pulse rate count performance of the meter.

   If the BMCS displays the desired value then the test has been successful and "S" should be recorded. If the Water Meter Pulse Type does not display the desired value then the test has failed and "F" should be recorded in the commissioning schedule/inspection and test plans.

3. At the conclusion of the test return the equipment and the BMCS to displaying the status, condition and desired values for normal operating conditions.

When a point is commissioned tick the Checked Out box which will indicate the user, time and date checked out, then add comments in the Checkout Notes box (Actual, Recorded, and Offset)

ACCURACY: With your water meter take a reading and compare to what is reading on the BMCS. Calibrate accordingly. Once the calibration is verified write Reading xx Actual xx Adjust +/- xx % in the Checkout Notes.

Measured Variable	Reported Accuracy
Water Flow	±2% of full scale

REFERENCE STANDARDS

CIBSE Commissioning Code C – Automatic Controls

CHECKLIST

Water Meter Pulse Type Testing				
BMCS Drawing Number				
	ITEM	**VERIFICATION METHOD**	**RESULT**	**RESULT**
1	Check installation against approved shop drawings (Size, type, model etc.)	Site Inspection		
2	Check that general construction and standard of finish is acceptable	Site Inspection		
3	Record name point information and compare against the approved specification	Data / Point Sheet Record		
4	Check the Water Meter Pulse Type has been commissioned by the hydraulics contractor	Data / Point Sheet Record		
5	Check that the BMCS wiring between the Meter and the BMCS is complete	Data / Point Sheet Record		
6	Using a magnet activate (or short circuit the output of the meter) the reed switch up to 5 times	Data / Point Sheet Record		
7	Confirm the meter pulse value for each meter (use test sheet over two time periods)	Data / Point Sheet Record		
8	Confirm the meter point on the BMS accumulates to the same value of simulated pulses	Data / Point Sheet Record		
9	Offset the BMCS display reading to match that of the meter accumulated value (to allow future comparison and calibration)	Data / Point Sheet Record		
Certified By Sub Contractor (initial): Date:				
Confirmed By (Head Contractor / Client) (initial): Date:				