

Annexure-F
DT Smart Meter Parameters

A. General Conditions:-

1. All Profiles mentioned below shall contain Meter serial number along with date and time of reading.
2. Bidder to provide details along with the bid documents
3. This is an indicative list of parameters, subject to changes during detail engineering to full fill application requirements.

B. List of Profile:

Instantaneous Profile	
1	Real time clock date and time
2	Voltage- R Phase V_{RN} .
3	Voltage- Y Phase V_{YN}
4	Voltage- B Phase V_{BN}
7	Current- R phase I_R
8	Current- Y phase I_Y
9	Current- B Phase I_B
10	Signed power factor- R Phase
11	Signed power factor- Y Phase
12	Signed power factor- B Phase
13	Three Phase Power Factor
14	Frequency, Hz
15	Apparent power kVA
16	Signed Active power, kW (+ Forward , - Reverse)
17	Signed Reactive power, kVAr (+ Lag , - Lead)
18	Cumulative energy, kWh (Import)

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19	Cumulative energy, kWh (Export)
20	Cumulative Energy, kVAh (While Active Import)
21	Cumulative Energy, kVAh (While Active Export)
22	Cumulative Energy, kVArh Q1
23	Cumulative Energy, kVArh Q2
24	Cumulative Energy, kVArh Q3
25	Cumulative Energy, kVArh Q4
26	Maximum Demand, kW (Forwarded) with Date and Time
27	Maximum Demand, kVA with Date and Time
28	Cumulative power OFF duration in min
29	Cumulative tamper count
30	Cumulative billing count
31	Cumulative programming count
32	Number of power Failures.
33	Billing Date
34	Current- Neutral I_N
35	% THD in R Phase Voltage
36	% THD in Y Phase Voltage
37	% THD in B Phase Voltage
38	% THD in R Phase Current

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39	% THD in Y Phase Current
40	% THD in B Phase Current
41	Phase Angle B Phase Voltage with reference to R Phase Voltage
42	Phase Angle Y Phase Voltage with reference to R Phase Voltage
43	High resolution kVARh
44	High resolution kVAh
45	High resolution kVARh
Billing Profile	
1	Billing date
2	Average Power Factor for billing period
3	Cumulative energy, kWh (Import)
4	Cumulative energy, kWh (Export)
5	Cumulative Energy, kVAh (While Active Import)
6	Cumulative Energy, kVAh (While Active Export)
7	Cumulative Energy, kVARh Q1
8	Cumulative Energy, kVARh Q2
9	Cumulative Energy, kVARh Q3
10	Cumulative Energy, kVARh Q4
11	Billing power ON duration in minutes
12	Maximum Demand, kW(forwarded) with Date and Time
13	Maximum Demand, kVA(forwarded) with Date and Time
14	R phase Cumulative kWh (Import)
15	Y phase Cumulative kWh (Import)
16	B phase Cumulative kWh (Import)
17	R Phase Cumulative kWh (Export)
18	Y Phase Cumulative kWh (Export)
19	R Phase Cumulative kWh (Export)
20	Maximum Demand, kVA with Date and Time

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21	Cumulative energy, kWh (Import)- TOD R1 to R8
22	Cumulative energy, kWh (Export)- TOD R1 to R8
23	Cumulative Energy, kVAh (While Active Import)- TOD R1 to R8
24	Cumulative Energy, kVAh (While Active Export)- R1 to R8
25	Cumulative Energy, kVArh Q1- TOD R1 to R8
26	Cumulative Energy, kVArh Q2- TOD R1 to R8
27	Cumulative Energy, kVArh Q3- TOD R1 to R8
28	Cumulative Energy, kVArh Q4- TOD R1 to R8
29	Average Power Factor for billing period- TOD R1 to R8
30	Maximum Demand, kW (Forwarded) with Date and Time- TOD R1 to R8
31	Maximum Demand, kVA (Forwarded) with Date and Time- TOD R1 to R8
32	Maximum Demand, kVAr with Date and Time- TOD R1 to R8
33	Cumulative energy, kWh (Import)- Fundamental
34	Cumulative energy, kWh (Export)- Fundamental
Load Survey Profile	
1	Real time clock date and time
2	Voltage- R Phase V_{RN}
3	Voltage- Y Phase V_{YN}
4	Voltage- B Phase V_{BN}
5	Current- R phase I_R
6	Current- Y phase I_Y
7	Current- B Phase I_B
8	Block energy, kWh (Import)
9	Block energy, kWh (Export)
10	Block Energy, kVAh (While Active Import)
11	Block Energy, kVAh (While Active Export)
12	Block Energy, kVArh Q1
13	Block Energy, kVArh Q2

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14	Block Energy, kVArh Q3
15	Block Energy, kVArh Q4
16	Block Energy, kWh (Net)
17	Current- Neutral I _N
18	Three Phase Power Factor
19	Power Off Duration (Min)
20	R Phase-Demand (kW) (import and export)
21	Y Phase-Demand (kW) (import and export)
22	B Phase-Demand (kW) (import and export)
23	R Phase-Demand (kVAh)
24	Y Phase-Demand (kVAh)
25	B Phase-Demand (kVAh)
26	Network Signal Strength (RSSI)
Daily Energy Profile-	
1	Real Time clock- date and time
2	Cumulative energy, kWh (Import)
3	Cumulative energy, kWh (Export)
4	Cumulative Energy, kVAh (While Active Import)
5	Cumulative Energy, kVAh (While Active Export)
6	Cumulative Energy, kVArh Q1
7	Cumulative Energy, kVArh Q2
8	Cumulative Energy, kVArh Q3
9	Cumulative Energy, kVArh Q4
Name Plate Profile-	
1	Meter SL no.
2	Device ID
3	Manufacture's name
4	Firmware version for meter

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5	Meter type
6	Category
7	Current Rating
8	Meter Year of manufacture- YYYY
9	Month of Manufacture
Programmable Profile-	
1	Real time clock, date and time
2	Demand integration period
3	Profile capture period
4	Single action schedule for billing dates
5	Activity calendar for time zones
6	RS 485 Device Address
7	Image transfer
8	LLS secret
9	HLS key
10	Global Key change
11	ESWF
Events List-	
SL	Event ID Name of The event
A	Event ID Voltage Releted
1	1/2 R- Phase Voltage Miss
2	3/4 Y- Phase Voltage Miss
3	5/6 B- Phase Voltage Miss
4	7/8 Over Voltage in any Phase
5	9/10 Low Voltage In any Phase
6	11/12 Voltage Unbalance
B	Event ID Current Releted
1	51/52 R Phase CT Reverse

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2	53/54	Y Phase CT Reverse
3	55/56	B Phase CT Reverse
4	57/58	R Phase CT Open
5	59/60	Y Phase CT Open
6	61/62	B phase CT Open
7	63/64	CT Bypass
8	65/66	CT Unbalance
9	67/68	Over Current in any Phase
C		Power Releted
1	101/102	Power Faliure
D	Other	
1	201/202	Abnormal magnetic Influence
2	203/204	Neutral Disturbance
3	205/206	Very Low PF
4	209/210	Plug In comm module removal
5	215/216	Overload
E		Transaction Releted
1	151	RTC Synchronise
2	152	Demand integration period
3	153	Profile Capture Period- (Load Curvey)
4	154	Single Action Scheddule for billing Dates
5	155	Activity Calender for Time Zones
6	156	RS 485 Device Address
7		LLS Secret Change
8		HLS key (US) Change
9		HLS Key (FW) Change

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10		Global Key Change (Encryption and Decryption)
11		ESWF Change
12		MD Reset
		New Firmware Activated.
F		Non Roll Over - Table 23
1	251	Meter Cover Open
		Harmonics realted
1		R Phase- % THD Value in Voltage
2		Y Phase- % THD Value in Voltage
3		B Phase- % THD Value in Voltage
4		R Phase- % THD Value in Current
6		B Phase- % THD Value in Current
Capture Parameter for Events-		
1	Date and time of event	
2	Event code	
3	Voltage- R Phase V_{RN}	
4	Voltage- Y Phase V_{YN}	
5	Voltage- B Phase V_{BN}	
6	Voltage- Phase V_{RY}	
7	Voltage- Phase V_{BY}	
8	Current- R phase I_R	
9	Current- Y phase I_Y	
10	Current- B Phase I_B	
11	Signed Power Factor R Phase	
12	Signed Power Factor Y Phase	
13	Signed Power Factor B Phase	
14	Cumulative Energy, kWh (import and export)	
15	Neutral Current	
16	Cumulative Energy kVAh (import and export)	

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17	Cumulative Energy kVARh- (Q1 to Q4)
Flags-	
1	Memory failure
2	Over current
3	Current without Voltage
4	Reverse run
5	Clock failed
6	Low power factor
7	Current imbalance
8	Voltage imbalance
9	Neutral disturbance
10	Meter cover open
11	Battery out of order
12	Current terminal shorting
13	Current terminal open
14	Neutral removal (Loss of neutral)
15	Invalid voltage
16	Magnetic tamper
17	Meter power off

C. Display Parameters:

Auto Mode:

1. AllSegmentondisplay
2. MeterSerialNumber
3. Date
4. RealTime
5. PhaseToNeutralVoltageR
6. PhaseToNeutralVoltageY
7. PhaseToNeutralVoltageB
8. RPhaseLine Current
9. YPhaseLine Current
10. BPhaseLineCurrent
11. TotalActiveImportEnergyRegister
12. TotalActiveExportEnergyRegister
13. ActiveNet(Imp-Exp)Energy Register
14. ApparentWhileActiveImportEnergyRegister
15. ApparentWhileActiveExportEnergyRegister
16. TODTotalActiveImportMDRegister(Reg0-24hrs)
17. TODTotalActiveExportMDRegister(Reg0-24hrs)
18. ReactiveImportWhileActiveImportEnergyRegister
19. ReactiveImportWhileActiveExportEnergyRegister
20. ReactiveExportWhileActiveImportEnergy Register

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21. ReactiveExportWhileActiveExportEnergyRegister
22. InstantaneousAveragePowerFactor
23. TODApparentWhileActiveImportMDRegister(Reg0-24hrs)
24. TODApparentWhileActiveExportMDRegister(Reg0-24hrs)
25. TODTotalActiveImportEnergyRegister(Reg1-8)
26. TODTotalActiveExportEnergyRegister(Reg1-8)
27. RPhaseVoltageTotalHarmonicDistortion
28. YPhaseVoltageTotalHarmonicDistortion
29. BPhaseVoltageTotalHarmonicDistortion
30. RPhaseLineCurrentTotalHarmonicDistortion
31. YPhaseLineCurrentTotalHarmonicDistortion
32. BPhaseLineCurrentTotalHarmonicDistortion
33. InstantaneousLoadActive
34. InstantaneousLoadReactive
35. InstantaneousLoadApparent
36. PresentPT Status
37. PresentCTStatus

Push Mode:

1. AllSegmentondisplay
2. MeterSerialNumber
3. Date
4. RealTime
5. PhaseToNeutralVoltageR
6. PhaseToNeutralVoltageY
7. PhaseToNeutralVoltageB
8. RPhaseLine Current
9. YPhaseLine Current
10. BPhaseLineCurrent
11. MDResetTimeand Date
12. History1TotalActiveImportEnergyRegister
13. History1TotalActiveExportEnergyRegister
14. History1ActiveNet(Imp-Exp)EnergyRegister
15. History1ReactiveImportWhileActiveImportEnergyRegister
16. History1ReactiveImportWhileActiveExportEnergyRegister
17. History1ReactiveExportWhileActiveImportEnergyRegister
18. History1ReactiveExportWhileActiveExportEnergyRegister
19. History1ApparentWhileActiveImportEnergyRegister
20. History1ApparentWhileActiveExportEnergyRegister
21. History1TODTotalActiveImportMDRegister(Reg0-24hrs)
22. History1TODTotalActiveImportMDOccurrenceTimeandDate(Reg0-24hrs)
23. History1TODTotalActiveExportMDRegister(Reg0-24hrs)
24. History1TODTotalActiveExportMDOccurrenceTimeandDate(Reg0-24hrs)
25. History1TODApparentWhileActiveImportMDRegister(Reg0-24hrs)
26. History1TODApparentWhileActiveImportMDOccurrenceTimeandDate(Reg0-24hrs)
27. History1TODApparentWhileActiveExportMDRegister(Reg0-24hrs)
28. History1TODApparentWhileActiveExportMDOccurrenceTimeanddate(Reg0-24hrs)
29. PresentPTStatus

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30. PresentCTStatus
31. PresentOthersStatus
32. LastOccurrenceTamperID
33. DateofLastTamperOccurrence
34. TimeofLastTamperOccurrence
35. LastRestorationTamper ID
36. DateofLastTamperRestoration
37. TimeofLastTamperRestoration
38. CumulativeTamperCount
39. FrontCoverOpen Count
40. LastCoveropendate
41. LastCoveropen time
42. NeutralCurrent
43. PresentVoltageandCurrentStatusANDPhaseSequence(Voltage)ANDCurrentSequence
44. InstantaneousLoadActive
45. InstantaneousLoadReactive
46. InstantaneousLoadApparent
47. RPhaseVoltageTotalHarmonicDistortion
48. YPhaseVoltageTotalHarmonicDistortion
49. BPhaseVoltageTotalHarmonicDistortion
50. RPhaseLineCurrentTotalHarmonicDistortion
51. YPhaseLineCurrentTotalHarmonicDistortion
52. BPhaseLineCurrentTotalHarmonicDistortion
53. HighResolutionEnergyTotalActive Import
54. HighResolutionEnergyTotalActive Export
55. ActiveNet(Imp-Exp)Energy Register
56. HighResolutionEnergyApparentwhileactiveimport
57. HighResolutionEnergyApparentwhileactiveexport
58. HighResolutionEnergyFund.ReactiveImportwhileActiveImport
59. HighResolutionEnergyFund.ReactiveImportwhileActiveExport
60. HighResolutionEnergyFund.ReactiveExportwhileActiveImport
61. HighResolutionEnergyFund.ReactiveExportwhileActiveExport
62. SelfDiagnosticFlags
63. ConnectionCheck
64. RSSI
65. Communication Error Codes/reason