

**CBECC-Com Input Data Model changes from 2016.2.1 (4372, Sept 2016) to 2016.3.0 (5128, Sept 2017):**

The compliance engine includes a backward compatibility mechanism that automatically addresses most data model changes, where property names or enumeration strings are revised or removed as the data model evolves. This mechanism also includes logic to write messages to project logs when backward compatibility for certain properties is expected to impact compliance analysis of a previous vs. current version of the tool. Additions to the data model or changes that require user input to determine the appropriate translation of properties/enumerations from previous to a current tool version are not something that the compliance engine supports in most cases.

Proj	Project			
<b>REMOVED</b>	ExcptCondWtrHtr,	ExceptionalConditionWaterHeater		- now determined by ruleset based on model inputs
		default: 2		
		1: "Yes"		
		2: "No"		
	VentStd	VentilationStandard	Enumeration	- Defaulted (now Prescribed by ruleset)
		default: -1		
		1: "T24-2013"		
<b>ADDED</b>	SimVarsDr	SimulationVariablesDoor	Integer	- Optional input
	SimVarsWtrHtr	SimulationVariablesWaterHeater	Integer	- Optional input
	SimVarsThrmLEngyStor	SimulationVariablesThermalEnergyStorage	Integer	- Optional input
	CompOptNew	ComplianceOptionNew	Integer	- Required input
	CompOptExist	ComplianceOptionExisting	Integer	- Required input
	CompOptAlt	ComplianceOptionAlteration	Integer	- Required input
	CompOptAdd	ComplianceOptionAddition	Integer	- Required input
	CompOptEnve	ComplianceOptionEnvelope	Integer	- Required input
	CompOptLtg	ComplianceOptionLighting	Integer	- Required input
	CompOptPartLtg	ComplianceOptionPartialLighting	Integer	- Required input
	CompOptMech	ComplianceOptionMechanical	Integer	- Required input
	CompOptPartMech	ComplianceOptionPartialMechanical	Integer	- Required input
	CompOptDHW	ComplianceOptionDomesticHotWater	Integer	- Required input
<b>CHANGED</b>	WeatherStation	WeatherStation	Enumeration	- Required input
		When: Proj:CliznNum = 7		
		default: 0		
		0: "- select -"		
		47: "CAMP-PENDLETON_722926"		ADDED (switched from CZ 10)
		30: "CARLSBAD_722927"		
		31: "IMPERIAL-BEACH_722909"		
		<del>32: "SAN-DIEGO-GILLESPIE_722907"</del>		REMOVED (switched to CZ 10)
		33: "SAN-DIEGO-LINDBERGH_722900"		
		34: "SAN-DIEGO-MONTGOMER_722903"		
		35: "SAN-DIEGO-NORTH-IS_722906"		
		When: Proj:CliznNum = 10		
		default: 0		
		0: "- select -"		
		<del>47: "CAMP-PENDLETON_722926"</del>		REMOVED (switched to CZ 7)

46:	"CHINO_722899"		
32:	"SAN-DIEGO-GILLESPIE_722907"	ADDED (switched from CZ 7)	
44:	"RIVERSIDE_722869"		
45:	"RIVERSIDE-MARCH-AFB_722860"		
CompType	ComplianceType	Enumeration	- Defaulted input
	default: 1		
	1: "NewComplete"		
	2: "NewEnvelope"		
	3: "NewEnvelopeAndLighting"		
	4: "NewEnvelopeAndPartialLighting"		
	5: "NewEnvelopeAndMechanical"		
	6: "NewEnvelopeAndLightingAndPartialMechanical"	New Option	
	7: "NewEnvelopeAndPartialLightingAndPartialMechanical"	New Option	
	8: "NewMechanical"		
	9: "NewMechanicalAndLighting"		
	10: "NewMechanicalAndPartialLighting"		
	11: "AdditionComplete"		
	12: "AdditionEnvelope"		
	13: "AdditionEnvelopeAndLighting"		
	14: "AdditionEnvelopeAndPartialLighting"		
	15: "AdditionEnvelopeAndMechanical"		
	16: "AdditionEnvelopeAndLightingAndPartialMechanical"	New Option	
	17: "AdditionEnvelopeAndPartialLightingAndPartialMechanical"	New Option	
	18: "AdditionMechanical"		
	19: "AdditionMechanicalAndLighting"		
	20: "AdditionMechanicalAndPartialLighting"		
	21: "ExistingAlteration"		
	22: "ExistingAdditionAndAlteration"		

**ThrmEngyStorModeSchDay ThermalEnergyStorageModeScheduleDay New Object Type**

ADDED	Type	Type	Enumeration	- - - -	Compulsory input
		default: 4			
		4: "ThrmEngyStorMode"			
Hr	Hour	Hour	Enumeration	#Vals: 24	- Compulsory input
		default: 3			
		1: "Discharge"			
		2: "Charge"			
		3: "Off"			

**SchWeek ScheduleWeek**

CHANGED	Type	Type	Enumeration	- - - -	Compulsory input
		default: 1			
		1: "Fraction"			
		2: "OnOff"			
		3: "Temperature"			
		4: "ThrmEngyStorMode"	New Option		

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**Sch**                      **Schedule**

**CHANGED**

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Type                                     Type                                     Enumeration - - - - Compulsory input
default: 1
1: "Fraction"
2: "OnOff"
3: "Temperature"
4: "ThrmEngyStorMode"                      New Option
    
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**Mat**                      **Material**

**CHANGED**

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CodeItem                                 CodeItem                                 Enumeration - Compulsory input
When: Mat:CodeCat = "Roofing"
default: 0
0: "- specify -"
19003: "5 PSF Roof - 1/2 in."
19000: "10 PSF Roof - 1 in."
19001: "15 PSF Roof - 1 1/2 in."
19002: "25 PSF Roof - 2 1/2 in."
19004: "Asbestos or cement shingles - 3/8 in."
19005: "Asphalt - bitumen with inert fill - 100 lb/ft3 - 3/4 in."
19006: "Asphalt - bitumen with inert fill - 144 lb/ft3 - 3/4 in."
19007: "Asphalt roll roofing - 1/4 in."
19008: "Asphalt shingles - 1/4 in."
19009: "Built-up roofing - 3/8 in."
19010: "Clay tile - 1/2 in."
19011: "Light Roof - 2/5 in."
19012: "Mastic asphalt (heavy - 20% grit) - 1 in."
19013: "Metal Standing Seam - 1/16 in."
19014: "Roof Gravel - 1 in."
19015: "Roof Gravel - 1/2 in."
19016: "Single Ply Roofing - 1/4 in."                      New Option
19017: "Slate - 1/2 in."
19018: "Tile Gap - 3/4 in."
19019: "Wood shingles - 3/4 in."
19020: "Wood shingles - plain and plastic film faced - 3/4 in."

FrmConfig                               FramingConfiguration                     Enumeration - CondRequired input
When: Mat:FrmMat = "Metal"
default: 0
0: "- specify -"
1: "Wall16inOC"
2: "Wall24inOC"
5: "Floor16inOC"
6: "Floor24inOC"
7: "Roof16inOC"
8: "Roof24inOC"
10: "WallMetalSingleLayerBatt"                      New Option
11: "WallMetalDoubleLayerBatt"                      New Option
12: "RoofMetalScrewDown"
    
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CavityInsOpt	13: "RoofMetalStandingSeam" 14: "RoofMetalStandingSeamFilledCavity" CavityInsulationOption When: Mat:FrmMat = "Metal" and: Mat:FrmConfig = 10 (new options for 'WallMetalSingleLayerBatt' FrmConfig) default: 0 0: "R-0" 6: "R-6" 10: "R-10" 11: "R-11" 13: "R-13" When: Mat:FrmMat = "Metal" and: Mat:FrmConfig = 11 (new options for 'WallMetalDoubleLayerBatt' FrmConfig) default: 0 19: "R-6 + R-13" 23: "R-10 + R-13" 26: "R-13 + R-13" 32: "R-19 + R-13"	Enumeration	Units: °F-ft2-h/Btu	CondRequired input
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**FenCons FenestrationConstruction**

<b>ADDED</b>	DrAutoCloser	DoorAutomaticCloser	Integer	- Defaulted input
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**DrCons DoorConstruction**

<b>ADDED</b>	DrAutoCloser	DoorAutomaticCloser	Integer	- Defaulted input
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**CrvLin CurveLinear**

<b>CHANGED</b>	All Long Names Updated			
Coef1	Coefficient1	Float	-	Optional input
Coef2	Coefficient2	Float	-	Optional input
MaxOut	MaximumOutput	Float	-	Optional input
MaxVar1	MaximumVariable1	Float	-	Optional input
MinOut	MinimumOutput	Float	-	Optional input
MinVar1	MinimumVariable1	Float	-	Optional input

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**CrvQuad CurveQuadratic**

<b>CHANGED</b>	All Long Names Updated			
Coef1	Coefficient1	Float	-	Optional input
Coef2	Coefficient2	Float	-	Optional input
Coef3	Coefficient3	Float	-	Optional input
MaxOut	MaximumOutput	Float	-	Optional input
MaxVar1	MaximumVariable1	Float	-	Optional input
MinOut	MinimumOutput	Float	-	Optional input

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MinVar1	MinimumVariable1		Float	-	Optional input
<hr/>					
<b>CrvCubic</b>	<b>CurveCubic</b>				
<b>CHANGED</b>		<b>All Long Names Updated</b>			
Coef1	Coefficient1		Float	-	Optional input
Coef2	Coefficient2		Float	-	Optional input
Coef3	Coefficient3		Float	-	Optional input
Coef4	Coefficient4		Float	-	Optional input
MaxOut	MaximumOutput		Float	-	Optional input
MaxVar1	MaximumVariable1		Float	-	Optional input
MinOut	MinimumOutput		Float	-	Optional input
MinVar1	MinimumVariable1		Float	-	Optional input
<hr/>					
<b>CrvDblQuad</b>	<b>CurveDoubleQuadratic</b>				
<b>CHANGED</b>		<b>All Long Names Updated</b>			
Coef1	Coefficient1		Float	-	Optional input
Coef2	Coefficient2		Float	-	Optional input
Coef3	Coefficient3		Float	-	Optional input
Coef4	Coefficient4		Float	-	Optional input
Coef5	Coefficient5		Float	-	Optional input
Coef6	Coefficient6		Float	-	Optional input
MaxOut	MaximumOutput		Float	-	Optional input
MaxVar1	MaximumVariable1		Float	-	Optional input
MaxVar2	MaximumVariable2		Float	-	Optional input
MinOut	MinimumOutput		Float	-	Optional input
MinVar1	MinimumVariable1		Float	-	Optional input
MinVar2	MinimumVariable2		Float	-	Optional input
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<b>CrvMapSglVar</b>	<b>CurveMapSingleVariable</b>	<b>New Object Type</b>			
<b>ADDED</b>					
Type	Type default: -1 1: "Linear" 2: "Quadratic" 3: "Cubic" 4: "Quartic" 5: "Exponent"		Enumeration	- - -	Required input
InterpMthd	InterpolationMethod default: -1 1: "LinearInterpolationOfTable" 2: "LagrangeInterpolationLinearExtrapolation" 3: "EvaluateCurveToLimits"		Enumeration	- - -	Defaulted input
NormalizationPt	NormalizationPoint		Float	- - -	Optional input
UnitTypeVar1	UnitTypeVariable1 default: -1 1: "Dimensionless"		Enumeration	- - -	Defaulted input

	2: "Temperature"			
	3: "VolumetricFlow"			
	4: "MassFlow"			
	5: "Distance"			
	6: "Power"			
UnitTypeOut	UnitTypeOutput	Enumeration	- - -	Defaulted input
	default: -1			
	1: "Dimensionless"			
	2: "Capacity"			
	3: "Power"			
MaxOut	MaximumOutput	Float	- - -	Optional input
MinOut	MinimumOutput	Float	- - -	Optional input
MaxVar1	MaximumVariable1	Float	- - -	Optional input
MinVar1	MinimumVariable1	Float	- - -	Optional input
ArrayVar1	ArrayVariable1	Float	#Vals: 30	Optional input
ArrayOut	ArrayOutput	Float	#Vals: 30	Optional input

**CrvMapDblVar**      **CurveMapDoubleVariable**      **New Object Type**

<b>ADDED</b>	Type	Type	Enumeration	- - -	Required input
		default: -1			
		1: "BiQuadratic"			
		2: "QuadraticLinear"			
InterpMthd	InterpolationMethod	Enumeration	- - -	Defaulted input	
	default: -1				
	1: "LinearInterpolationOfTable"				
	2: "LagrangeInterpolationLinearExtrapolation"				
	3: "EvaluateCurveToLimits"				
NormalizationPt	NormalizationPoint	Float	- - -	Optional input	
UnitTypeVar1	UnitTypeVariable1	Enumeration	- - -	Defaulted input	
	default: -1				
	1: "Dimensionless"				
	2: "Temperature"				
	3: "VolumetricFlow"				
	4: "MassFlow"				
	5: "Distance"				
	6: "Power"				
UnitTypeVar2	UnitTypeVariable2	Enumeration	- - -	Defaulted input	
	default: -1				
	1: "Dimensionless"				
	2: "Temperature"				
	3: "VolumetricFlow"				
	4: "MassFlow"				
	5: "Distance"				
	6: "Power"				
UnitTypeOut	UnitTypeOutput	Enumeration	- - -	Defaulted input	
	default: -1				
	1: "Dimensionless"				
	2: "Capacity"				
	3: "Power"				
MaxOut	MaximumOutput	Float	- - -	Optional input	

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MinOut	MinimumOutput	Float	- - -	Optional input
MaxVar1	MaximumVariable1	Float	- - -	Optional input
MaxVar2	MaximumVariable2	Float	- - -	Optional input
MinVar1	MinimumVariable1	Float	- - -	Optional input
MinVar2	MinimumVariable2	Float	- - -	Optional input
ArrayVar1	ArrayVariable1	Float	#Vals: 60	Optional input
ArrayVar2	ArrayVariable2	Float	#Vals: 60	Optional input
ArrayOut	ArrayOutput	Float	#Vals: 60	Optional input

**Bldg Building**

<b>ADDED</b>				
WholePlantModeled	WholePlantModeled	Integer	- - -	Defaulted input
CoilClgCapHydronic	CoilCoolingCapacityHydronic	Float	Units: Btu/h	Defaulted must be >= 0
CoilHtgCapHydronic	CoilHeatingCapacityHydronic	Float	Units: Btu/h	Defaulted must be >= 0

**Spc Space**

<b>REMOVED</b>				
CodeOtherVentPerPerson	CodeOtherVentilationPerPerson	Float	Units: cfm/person	Defaulted input
CodeOtherVentPerArea	CodeOtherVentilationPerArea	Float	Units: cfm/ft2	Defaulted input
CodeOtherVentACH	CodeOtherVentilationAirChangesPerHour	Float	Units: changes/hr	Defaulted input
CodeOtherVentFlow	CodeOtherVentilationFlow	Float	Units: cfm	Defaulted input
CodeOtherExhPerArea	CodeOtherExhaustPerArea	Float	Units: cfm/ft2	Defaulted input
CodeOtherExhACH	CodeOtherExhaustAirChangesPerHour	Float	Units: changes/hr	Defaulted input

**IntFlr InteriorFloor**

<b>ADDED</b>				
Status	Status	Enumeration	- - -	Required input
	default: -1			
	1: "New"			
	2: "Existing"			
	3: "Altered"			

**ThrmZn ThermalZone**

<b>ADDED</b>				
HasUnknownHVAC	HasUnknownHVAC	Integer	- - -	Defaulted input
HasNoClg	HasNoCooling	Integer	- - -	Optional input
AddClgSys	AddCoolingSystem	Integer	- - -	Optional input
VentStdDesc	VentilationStandardDescription	String	- - -	CondRequired input
<b>CHANGED</b>				
VentStd	VentilationStandard	Enumeration	- - -	Defaulted input
	default: -1			
	1: "T24-2013"			
	2: "T24-2016"			<b>New Option</b>

3: "Other" New Option

**AirSys**                      **AirSystem**

<b>ADDED</b>	IsAllOA DuctStatus	IsAllOutsideAir DuctStatus	Integer Integer	- - - - - -	Defaulted input Defaulted input
<b>CHANGED</b>	Type	Type default: -1 0: "- specify -" 1: "PVAV" 2: "VAV" 3: "SZAC" 4: "SZHP" 5: "SZVAVAC" 6: "SZVAVHP" 7: "HV" 9: "SPVAC" 10: "SPVHP" 11: "DOASCV" 12: "DOASVAV" 8: "Exhaust"	Enumeration	- - -	Compulsory input
					<span style="background-color: yellow;">New Option</span> <span style="background-color: yellow;">New Option</span>

**ZnSys**                      **ZoneSystem**

<b>ADDED</b>	IsAllOA FurnaceType	IsAllOutsideAir FurnaceType default: -1 1: "Fan" 2: "Gravity"	Integer Enumeration	- - - - - -	Optional input Defaulted input
	DuctStatus	DuctStatus	Integer	- - -	Defaulted input
<b>CHANGED</b>	Type	Type default: -1 0: "- specify -" 1: "SZAC" 2: "SZHP" 9: "SPVAC" 10: "SPVHP" 3: "FPFC" 4: "WSHP" 5: "PTAC" 6: "PTHP" 14: "Furnace" 21: "Exhaust" 22: "Baseboard"	Enumeration	- - -	Compulsory input
					<span style="background-color: yellow;">New Option</span>



23: "PassiveBeam"                      New Option  
 12: "MiniSplitAC"                      New Option  
 13: "MiniSplitHP"                      New Option

SubType	SubType	Substantial Updates To Conditional Dependencies	Enumeration	- - -	Defaulted input
	When: ZnSys:Type = "SZAC"				
	default: 4				
	1: "Packaged3Phase"				
	2: "Split3Phase"				
	3: "Packaged1Phase"				
	4: "Split1Phase"				
	When: ZnSys:Type = "SZHP"				
	default: 4				
	1: "Packaged3Phase"				
	2: "Split3Phase"				
	3: "Packaged1Phase"				
	4: "Split1Phase"				
	When: ZnSys:Type = "SPVAC"				
	default: 1				
	1: "Packaged3Phase"				
	3: "Packaged1Phase"				
	When: ZnSys:Type = "SPVHP"				
	default: 1				
	1: "Packaged3Phase"				
	3: "Packaged1Phase"				
	When: ZnSys:Type = "FPFC"				
	default: 5				
	5: "NA"				
	When: ZnSys:Type = "WSHP"				
	default: 5				
	1: "Packaged3Phase"				
	3: "Packaged1Phase"				
	5: "NA"				
	When: ZnSys:Type = "PTAC"				
	default: 5				
	5: "NA"				
	When: ZnSys:Type = "PTHP"				
	default: 5				
	5: "NA"				
	When: ZnSys:Type = "Furnace"				
	default: 6				
	6: "Wall"				
	7: "Floor"				
	8: "Room"				
	9: "Other"				
	When: ZnSys:Type = "Exhaust"				
	default: 5				
	5: "NA"				
	When: ZnSys:Type = "Baseboard"				
	default: 5				
	5: "NA"				
	When: ZnSys:Type = "PassiveBeam"				
	default: 5				
	5: "NA"				

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When: ZnSys:Type = "MiniSplitAC"
      default: 2
          2: "Split3Phase"
          4: "Split1Phase"
When: ZnSys:Type = "MiniSplitHP"
      default: 2
          2: "Split3Phase"
          4: "Split1Phase"
else:
      default: 5
          1: "Packaged3Phase"
          2: "Split3Phase"
          3: "Packaged1Phase"
          4: "Split1Phase"
          5: "NA"
          6: "Wall"
          7: "Floor"
          8: "Room"
          9: "Other"
    
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<b>AirSeg</b>	<b>AirSegment</b>			
<b>CHANGED</b>				
Type	Type	Enumeration	- - -	Compulsory input
	default: 0			
	0: "- specify -"			
	1: "Supply"			
	2: "Return"			
	3: "Relief"			
	4: "Exhaust"			
	5: "OutsideAir"			<b>Option Renamed (was: 'OutdoorAir')</b>
	6: "Connector"			

<b>TrmlUnit</b>	<b>TerminalUnit</b>	<b>new Child Type: CoilClg</b>		
<b>ADDED</b>				
TotAirFlow	TotalAirFlow	Float	Units: cfm	Defaulted input
<b>CHANGED</b>				
Type	Type	Enumeration	- - -	Compulsory input
	default: 0			
	0: "- specify -"			
	1: "Uncontrolled"			
	2: "VAVReheatBox"			
	3: "ParallelFanBox"			
	4: "SeriesFanBox"			
	5: "VAVNoReheatBox"			
	6: "ActiveBeam"			<b>New Option</b>

FluidSys	FluidSystem				
<b>REMOVED</b>					
SHWSysCnt	SHWSystemCount		Integer	- - -	Optional input
<b>Chlr</b>	<b>Chiller</b>				
<b>ADDED</b>					
EnableOnThrmEngyStorDischrg	EnableOnThermalEnergyStorageDischarge		Integer	- - -	Defaulted input
<b>ThrmEngyStor</b>	<b>ThermalEnergyStorage</b>	<b>New Object Type</b>			
	Parent: FluidSys	Children: Pump			
<b>ADDED</b>					
Type	Type	default: 1 1: "ChilledWater"	Enumeration	- - -	Required input
Status	Status	default: 1 1: "New" 2: "Existing"	Enumeration	- - -	Defaulted input
DischrgPriority	DischargePriority	default: 1 1: "Storage" 2: "Chiller"	Enumeration	- - -	Required input
CapRtd	CapacityRated		Float	Units: Btu/h	Required input
StorCap	StorageCapacity		Float	Units: gal	Required input
TankShape	TankShape	default: 1 1: "VerticalCylinder" 2: "HorizontalCylinder" 3: "Rectangular"	Enumeration	- - -	Required input
TankHgt	TankHeight		Float	Units: ft	Required input
TankLenToWdRat	TankLengthToWidthRatio		Float	- - -	CondRequired input
TankNodeCnt	TankNodeCount	default: 1 1: "5" 2: "6" 3: "7" 4: "8" 5: "9" 6: "10"	Enumeration	- - -	Required input
TankR	TankRValue		Float	Units: ft2-°F/Btuh	Required input
StorLctn	StorageLocation	default: 1 1: "Indoor" 2: "Outdoor" 3: "Underground"	Enumeration	- - -	Required input
StorLctnSim	StorageLocationSimulated	default: 1	Enumeration	- - -	Required input

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	1: "Zone"				
	2: "Outdoor"				
StorZnRef	StorageZoneReference	ObjectRef	- - -	CondRequired	input
	ThrmlZn				
ModeSchRef	ModeScheduleReference	ObjectRef	- - -	Required	input
	Sch (Sch:Type = "ThrmlEngyStorMode")				
ChrgFluidSegInRef	ChargeFluidSegmentInReference	ObjectRef	- - -	Required	input
	FluidSeg (FluidSeg:Type = "PrimarySupply")				
	FluidSeg (FluidSeg:Type = "SecondarySupply")				
ChrgFluidSegOutRef	ChargeFluidSegmentOutReference	ObjectRef	- - -	Required	input
	FluidSeg (FluidSeg:Type = "PrimaryReturn")				
	FluidSeg (FluidSeg:Type = "SecondaryReturn")				
DischrgFluidSegInRef	DischargeFluidSegmentInReference	ObjectRef	- - -	Required	input
	FluidSeg (FluidSeg:Type = "PrimaryReturn")				
	FluidSeg (FluidSeg:Type = "SecondaryReturn")				
DischrgFluidSegOutRef	DischargeFluidSegmentOutReference	ObjectRef	- - -	Required	input
	FluidSeg (FluidSeg:Type = "PrimarySupply")				
	FluidSeg (FluidSeg:Type = "SecondarySupply")				

**WtrHtr WaterHeater**

<b>ADDED</b>	Type	Type	Enumeration	- - -	Defaulted	input
		When: WtrHtr:FuelSrc = "Gas"				
		default: 1				
		1: "Conventional"				
		else:				
		default: 1				
		1: "Conventional"				
		2: "HeatPumpPackaged"				
		3: "HeatPumpSplit"				
UEF	UniformEnergyFactor		Float	- - -	CondRequired	input
FirstHrRating	FirstHourRating		Integer	Units: gal	CondRequired	input
FlowRt	FlowRate		Float	Units: gal/min	CondRequired	input
CprsrLoc	CompressorLocation		Integer	- - -	CondRequired	input
CprsrZnRef	CompressorZoneReference		ObjectRef	- - -	CondRequired	input
	ThrmlZn (ThrmlZn:Type = "Conditioned")					
StorLoc	StorageLocation		Integer	- - -	CondRequired	input
StorZnRef	StorageZoneReference		ObjectRef	- - -	CondRequired	input
	ThrmlZn (ThrmlZn:Type = "Conditioned")					
InpPwr	InputPower		Float	Units: kW	CondRequired	input
TankHgtSim	TankHeightSimulated		Float	Units: ft	CondRequired	input
IsUEFRtd	IsUEFRated		Integer	- - -	Optional	input
<b>REMOVED</b>						
HIR_fPLRCrvRef	HIR_fPLRCurveReference		ObjectRef	- - -	Optional	input
	CrvCubic					
PilotEnergyRpt	PilotEnergyReport		Integer	Units: Btu/hr	Optional	input

**ResDHWSys ResidentialDHWSys**

**CHANGED**

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Type
Type
When: ResDHWSys:CentralSys = 1
      default: 3840
           0: "- specify -"
           3840: "Standard"
           4096: "Pipe Insulation, All Lines"
           8392704: "(HERS req'd) Pipe Insulation, All Lines"
else:
      default: 3840
           0: "- specify -"
           3840: "Standard"
           4096: "Pipe Insulation, All Lines"
           4608: "Parallel Piping"
           4609: "Point of use"
           4992: "Recirculation, Non-Demand Control"
           5248: "Recirculation, Demand Control Push Button"
           5504: "Recirculation, Demand Control Occupancy/Motion"
           8392704: "(HERS req'd) Pipe Insulation, All Lines"
           8393216: "(HERS req'd) Parallel Piping"
           8393856: "(HERS req'd) Recirculation, Demand Control Push Button"
           8394112: "(HERS req'd) Recirculation, Demand Control Occupancy/Motion"
           8394496: "(HERS req'd) Compact Distribution System"

```

Enumeration - - - Required input

Removed (now equivalent to 'Standard')

Removed (now equivalent to 'Standard')

New Option

**ResWtrHtr ResidentialWaterHeater**

```

IsUEFRtd
HPWHBrand
IsUniformEnergyFactorRated
HeatPumpWaterHeaterBrand
When: ResWtrHtr:ElementType = "Heat Pump"
and: ResWtrHtr:HtPumpWtrHtrNEEARtd = 1
      default: 1
           1: "- select Brand -"
           11: "A. O. Smith"
           12: "American"
           13: "Bradford White"
           14: "EcoSense"
           15: "GE"
           16: "Kenmore"
           17: "Lochinvar"
           18: "Reliance"
           19: "Rheem"
           20: "Richmond"
           21: "Ruud"
           22: "Sanden"
           23: "State"
           24: "Stiebel Eltron"
           25: "US Craftmaster"
           26: "Whirlpool"
else:
      default: 0
           0: "n/a"

```

Integer - - - Required input

Enumeration - - - CondRequired input

HPWHModel	HeatPumpWaterHeaterModel	Enumeration	CondRequired	input
When: ResWtrHtr:HPWHBrand = "n/a"	default: 0			
	0: "n/a"			
When: ResWtrHtr:HPWHBrand = 1	default: 0			
	0: "n/a"			
When: ResWtrHtr:HPWHBrand = 11	default: 1			
	1: "- select Model -"			
	110113: "FPTU 50 120 (50 gal)"			
	110214: "FPTU 66 120 (66 gal)"			
	110315: "FPTU 80 120 (80 gal)"			
	110412: "HHPT 80 102 (80 gal)"			
	110513: "HP10-50H45DV (50 gal)"			
	110615: "HP10-80H45DV (80 gal)"			
	110713: "HPTU 50 120 (50 gal)"			
	110813: "HPTU 50N 120 (50 gal)"			
	110914: "HPTU 66 120 (66 gal)"			
	111014: "HPTU 66N 120 (66 gal)"			
	111115: "HPTU 80 120 (80 gal)"			
	111215: "HPTU 80N 120 (80 gal)"			
	111311: "PHPT 60 (60 gal)"			
	111412: "PHPT 80 (80 gal)"			
When: ResWtrHtr:HPWHBrand = 12	default: 1			
	1: "- select Model -"			
	120111: "HPE10260H045DV (60 gal)"			
	120212: "HPE10280H045DV (80 gal)"			
	120312: "HPE6280H045DV 102 (80 gal)"			
	120413: "HPHE10250H045DV 120 (50 gal)"			
	120513: "HPHE10250H045DVN 120 (50 gal)"			
	120614: "HPHE10266H045DV 120 (66 gal)"			
	120714: "HPHE10266H045DVN 120 (66 gal)"			
	120815: "HPHE10280H045DV 120 (80 gal)"			
	120915: "HPHE10280H045DVN 120 (80 gal)"			
	121013: "HPHE6250H045DV (50 gal)"			
	121114: "HPHE6266H045DV 120 (66 gal)"			
	121215: "HPHE6280H045DV 120 (80 gal)"			
	121313: "HPHE650H045DV 120 (50 gal)"			
When: ResWtrHtr:HPWHBrand = 13	default: 1			
	1: "- select Model -"			
	130119: "RE2H50R10B-1NCWT (50 gal)"			
	130223: "RE2H80R10B-1NCWT (80 gal)"			
When: ResWtrHtr:HPWHBrand = 14	default: 1			
	1: "- select Model -"			
	140121: "HB50ES (50 gal)"			
When: ResWtrHtr:HPWHBrand = 15	default: 1			
	1: "- select Model -"			
	150119: "BEH50DCEJSB (50 gal)"			
	150223: "BEH80DCEJSB (80 gal)"			

```

150319: "GEH50DEEJSC (50 gal)"
150419: "GEH50DEEJXXX (50 gal)"
150519: "GEH50DFEJSR (50 gal)"
150619: "GEH50DHEKSC (50 gal)"
150723: "GEH80DEEJSC (80 gal)"
150823: "GEH80DFEJSR (80 gal)"
150923: "GEH80DHEKSC (80 gal)"
When: ResWtrHtr:HPWHBrand = 16
default: 1
1: "- select Model -"
160111: "153.32116 (60 gal)"
160212: "153.32118 (80 gal)"
160313: "153.5925 (50 gal)"
160414: "153.5926 (66 gal)"
160515: "153.5928 (80 gal)"
When: ResWtrHtr:HPWHBrand = 17
default: 1
1: "- select Model -"
170113: "HPA051KD 120 (50 gal)"
170213: "HPA052KD 120 (50 gal)"
170314: "HPA067KD 120 (66 gal)"
170414: "HPA068KD 120 (66 gal)"
170515: "HPA081KD 120 (80 gal)"
170615: "HPA082KD 120 (80 gal)"
When: ResWtrHtr:HPWHBrand = 18
default: 1
1: "- select Model -"
180113: "10 50 DHPHT 120 (50 gal)"
180213: "10 50 DHPHTNE 120 (50 gal)"
180311: "10 60 DHPT (60 gal)"
180414: "10 66 DHPHT 120 (66 gal)"
180514: "10 66 DHPHTN 120 (66 gal)"
180615: "10 80 DHPHT 120 (80 gal)"
180715: "10 80 DHPHTNE 120 (80 gal)"
180812: "10 80 DHPT (80 gal)"
180913: "6 50 DHPHT 120 (50 gal)"
181014: "6 66 DHPHT 120 (66 gal)"
181115: "6 80 DHPHT 120 (80 gal)"
181215: "6 80 DHPT 102 (80 gal)"
When: ResWtrHtr:HPWHBrand = 19
default: 1
1: "- select Model -"
190121: "HB50RH (50 gal)"
190221: "PROPH50 T2 RH245 (50 gal)"
190313: "PROPH50 T2 RH350 D (50 gal)"
190414: "PROPH65 T2 RH350 D (65 gal)"
190521: "PROPH80 T2 RH245 (80 gal)"
190615: "PROPH80 T2 RH350 D (80 gal)"
190713: "XE50T10HD50U0 (50 gal)"
190821: "XE50T12EH45U0 (50 gal)"
190921: "XE50T12EH45U0W (50 gal)"
191014: "XE65T10HD50U0 (65 gal)"
191115: "XE80T10HD50U0 (80 gal)"
191221: "XE80T12EH45U0 (80 gal)"

```

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191321: "XE80T12EH45U0W (80 gal)"
191421: "XE80T12EH45U0W (80 gal)"
When: ResWtrHtr:HPWHBrand = 20
default: 1
1: "- select Model -"
200113: "10E50-HP4D (50 gal)"
200214: "10E65-HP4D (65 gal)"
200315: "10E80-HP4D (80 gal)"
200421: "12E50-HP (50 gal)"
200521: "12E80-HP (80 gal)"
200621: "HB50RM (50 gal)"
When: ResWtrHtr:HPWHBrand = 21
default: 1
1: "- select Model -"
210121: "HB50RU (50 gal)"
210221: "PROUH50 T2 RU245 (50 gal)"
210313: "PROUH50 T2 RU350 D (50 gal)"
210414: "PROUH65 T2 RU350 D (65 gal)"
210521: "PROUH80 T2 RU245 (80 gal)"
210615: "PROUH80 T2 RU350 D (80 gal)"
When: ResWtrHtr:HPWHBrand = 22
default: 1
1: "- select Model -"
220116: "GS3-45HPA-US & SAN-43SSAQA (43 gal)"
220216: "GS3-45HPA-US & GAUS-160QTA (43 gal)"
220317: "GS3-45HPA-US & SAN-83SSAQA (83 gal)"
220417: "GS3-45HPA-US & GAUS-315EQT D (83 gal)"
220517: "GUS-45HPA-US & SAN-83SSAQA (83 gal)"
220617: "GUS-45HPA-US & GAUS-315EQT D (83 gal)"
When: ResWtrHtr:HPWHBrand = 23
default: 1
1: "- select Model -"
230112: "EP6 80 DHPT 102 (80 gal)"
230211: "EPX 60 DHPT (60 gal)"
230312: "EPX 80 DHPT (80 gal)"
230413: "HP6 50 DHPT 120 (50 gal)"
230514: "HP6 66 DHPT 120 (66 gal)"
230615: "HP6 80 DHPT 120 (80 gal)"
230713: "HPX 50 DHPT 120 (50 gal)"
230813: "HPX 50 DHPTNE 120 (50 gal)"
230914: "HPX 66 DHPT 120 (66 gal)"
231014: "HPX 66 DHPTNE 120 (66 gal)"
231115: "HPX 80 DHPT 120 (80 gal)"
231215: "HPX 80 DHPTNE 120 (80 gal)"
When: ResWtrHtr:HPWHBrand = 24
default: 1
1: "- select Model -"
240122: "Accelera 220 E (58 gal)"
240212: "Accelera 300/WHP 300 (80 gal)"
When: ResWtrHtr:HPWHBrand = 25
default: 1
1: "- select Model -"
250112: "HPE2F80HD045VU 102 (80 gal)"
250211: "HPE2K60HD045V (60 gal)"

```



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250312: "HPE2K80HD045V (80 gal)"
250413: "HPHE2F50HD045VU 120 (50 gal)"
250514: "HPHE2F66HD045VU 120 (66 gal)"
250615: "HPHE2F80HD045VU 120 (80 gal)"
250713: "HPHE2K50HD045VUN 120 (50 gal)"
250814: "HPHE2K66HD045VUN 120 (66 gal)"
250915: "HPHE2K80HD045VUN 120 (80 gal)"
When: ResWtrHtr:HPWHBrand = 26
default: 1
1: "- select Model -"
260111: "HPE2K60HD045V (60 gal)"
260212: "HPE2K80HD045V (80 gal)"
260313: "HPHE2K50HD045V 120 (50 gal)"
260413: "HPHE2K50HD045VC 120 (50 gal)"
260513: "HPHE2K50HD045VN 120 (50 gal)"
260614: "HPHE2K66HD045V 120 (66 gal)"
260714: "HPHE2K66HD045VC 120 (66 gal)"
260815: "HPHE2K80HD045V 120 (80 gal)"
260915: "HPHE2K80HD045VC 120 (80 gal)"
261032: "HPSE2K50HD045V 100 (WP) (50 gal)"
261132: "HPSE2K50HD045VC 100 (WP) (50 gal)"
261212: "HPSE2K80HD045V (80 gal)"
261312: "HPSE2K80HD045VC (80 gal)"
else:
default: 0
0: "n/a"
CprsrZn CompressorZone Enumeration - - - CondRequired input
default: 3
0: "Conditioned"
1: "Unconditioned"
2: "Outside or in Exterior Closet"
UEF UniformEnergyFactor Float - - - CondRequired input
FirstHrRating FirstHourRating Float Units: gal CondRequired input
FlowRate FlowRate Float Units: gal/min CondRequired input
RcvryEff RecoveryEfficiency Float Units: % CondRequired input

CHANGED
HtPumpWtrHtrNEEARtd HeatPumpWaterHeaterNEEARated renamed from: HtPumpWtrHtrNEEA / HeatPumpWaterHeaterNEEA
TankCat TankCategory Enumeration - - - Required input
When: ResWtrHtr:ElementType = "Electric Resistance"
default: 3
2: "Instantaneous"
3: "Storage"
4: "Commercial Instantaneous (TE)" New Option
5: "Commercial Storage (TE & SBL)" New Option
When: ResWtrHtr:ElementType = "Heat Pump"
default: 3
3: "Storage"
else:
default: 3
0: "Boiler"
1: "Indirect"
2: "Instantaneous"

```

	3:	"Storage"	
	4:	"Commercial Instantaneous (TE)"	New Option
	5:	"Commercial Storage (TE & SBL)"	New Option
EF	EnergyFactor	renamed from: EngyFac	