



Universidad de Oviedo

Memoria del Trabajo Fin de Máster realizado por

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para la obtención del título de

Máster en Ingeniería de Automatización e Informática Industrial

**APLICACIÓN PARA LA ADQUISICIÓN Y
GESTIÓN DE PARÁMETROS ENERGÉTICOS**

**ANEXO I: CÓDIGO
FUENTE**

(Enero 2016)

POU: AV_MBus, hoja de trabajo: AV_MBus

```
if xMbus_horasfuncionamiento then
  DataLogReal_V0_18_1(rData:=lrWorkingTime(* REAL *),
    strColumnName:='Mbus_HorasFuncionamiento'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_1.udtDataLogger;
end_if;

if xConsumoporHora then
  DataLogReal_V0_18_3(rData:=lrConsumoporhora(* REAL *),
    strColumnName:='Consumo_Mbus'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_3.udtDataLogger;
end_if;

if xVolumen then
  DataLogReal_V0_18_5(rData:=lrVolumen(* REAL *),
    strColumnName:='Volumen_Mbus'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_5.udtDataLogger;
end_if;

if xTempIN then
  DataLogReal_V0_18_7(rData:=lrTempIN(* REAL *),
    strColumnName:='Mbus_TempIn'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_7.udtDataLogger;
end_if;

if xTempOUT then
  DataLogReal_V0_18_9(rData:=lrWorkingTime(* REAL *),
    strColumnName:='Mbus_TempOut'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_9.udtDataLogger;
end_if;
```

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Current POU: AV_MBus	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:14

POU: AV_IOLink, hoja de trabajo: AV_IOLink

```
if xIOLink then
  DataLogReal_V0_18_1(rData:=Salida_IOLink(* REAL *),
  strColumnName:='IOLink_Puerto1'(* STRING *),
  udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_1.udtDataLogger;
end_if;
```

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POU: AV_PM, hoja de trabajo: AV_PM

```

if xPM_V1 then
  DataLogReal_V0_18_1(rData:=PM_V1(* REAL *),
    strColumnName:='V1_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_1.udtDataLogger;
end_if;

if xPM_V2 then
  DataLogReal_V0_18_2(rData:=PM_V2(* REAL *),
    strColumnName:='V2_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_2.udtDataLogger;
end_if;

if xPM_V3 then
  DataLogReal_V0_18_3(rData:=PM_V3(* REAL *),
    strColumnName:='V3_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_3.udtDataLogger;
end_if;

if xPM_V12 then
  DataLogReal_V0_18_4(rData:=PM_V12(* REAL *),
    strColumnName:='V3_12'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_4.udtDataLogger;
end_if;

if xPM_V23 then
  DataLogReal_V0_18_5(rData:=PM_V23(* REAL *),
    strColumnName:='V23_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_5.udtDataLogger;
end_if;

if xPM_V31 then
  DataLogReal_V0_18_6(rData:=PM_V31(* REAL *),
    strColumnName:='V31_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_6.udtDataLogger;
end_if;

if xPM_I1 then
  DataLogReal_V0_18_7(rData:=PM_I1(* REAL *),
    strColumnName:='VI1_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_7.udtDataLogger;
end_if;

if xPM_I2 then
  DataLogReal_V0_18_8(rData:=PM_I2(* REAL *),
    strColumnName:='VI2_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_8.udtDataLogger;
end_if;

if xPM_I3 then
  DataLogReal_V0_18_9(rData:=PM_I3(* REAL *),
    strColumnName:='VI3_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
  (* udtDL_V3 *)Data:=DataLogReal_V0_18_9.udtDataLogger;
end_if;

if xPM_In then
  DataLogReal_V0_18_10(rData:=PM_In(* REAL *),

```

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```

    strColumnName:='VIn_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_10.udtDataLogger;
end_if;

if xPM_P1 then
    DataLogReal_V0_18_11(rData:=PM_P1(* REAL *),
    strColumnName:='VP1_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_11.udtDataLogger;
end_if;

if xPM_P2 then
    DataLogReal_V0_18_12(rData:=PM_P2(* REAL *),
    strColumnName:='VP2_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_12.udtDataLogger;
end_if;

if xPM_P3 then
    DataLogReal_V0_18_13(rData:=PM_P3(* REAL *),
    strColumnName:='VP3_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_13.udtDataLogger;
end_if;

if xPM_Pt then
    DataLogReal_V0_18_14(rData:=PM_Pt(* REAL *),
    strColumnName:='VPt_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_14.udtDataLogger;
end_if;

if xPM_Frec then
    DataLogReal_V0_18_15(rData:=PM_Frec(* REAL *),
    strColumnName:='Frec_PM'(* STRING *),
    udtDataLogger:=Data(* udtDL_V3 *));
    (* udtDL_V3 *)Data:=DataLogReal_V0_18_15.udtDataLogger;
end_if;

```

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POU: AV_AnalogTemp, hoja de trabajo: AV_AnalogTemp

```
if xTemp01 then
  DataLogReal_V0_18_1(rData:=Temperatura01,
    strColumnName:='Sensor_TEMP_Canal1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_1.udtDataLogger;
end_if;

if xTemp02 then
  DataLogReal_V0_18_2(rData:=Temperatura02,
    strColumnName:='Sensor_TEMP_Canal2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_2.udtDataLogger;
end_if;
```

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Current POU: AV_AnalogTemp	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:14

POU: ArchiveValues_Empro, hoja de trabajo: ArchiveValues_Empro

```
(*ARCHIVE VALUES PULSES S0*)
xTCP:=xClient_TCP;
xRTU:=xActivate_Master_RTU;

(*if xVal_Empro then*)
  if xTCP then

    if xU12 then
      DataLogReal_V0_18_1(rData:=U12_tcp,
        strColumnName:='U12',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_1.udtDataLogger;
    end_if;

    if xU23 then
      DataLogReal_V0_18_2(rData:=U23_tcp,
        strColumnName:='U23',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_2.udtDataLogger;
    end_if;

    if xU31 then
      DataLogReal_V0_18_3(rData:=U31_tcp,
        strColumnName:='U31',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_3.udtDataLogger;
    end_if;

    if xV1 then
      DataLogReal_V0_18_4(rData:=V1_tcp,
        strColumnName:='V1',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_4.udtDataLogger;
    end_if;

    if xV2 then
      DataLogReal_V0_18_5(rData:=V2_tcp,
        strColumnName:='V2',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_5.udtDataLogger;
    end_if;

    if xV3 then
      DataLogReal_V0_18_6(rData:=V3_tcp,
        strColumnName:='V3',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_6.udtDataLogger;
    end_if;

    if xfrec then
      DataLogReal_V0_18_7(rData:=frec_tcp,
        strColumnName:='Frecuencia',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_7.udtDataLogger;
    end_if;

    if xI1 then
      DataLogReal_V0_18_8(rData:=I1_tcp,
        strColumnName:='I1',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_8.udtDataLogger;
    end_if;

    if xI2 then
      DataLogReal_V0_18_9(rData:=I2_tcp,
        strColumnName:='I2',
        udtDataLogger:=Data);
      Data:=DataLogReal_V0_18_9.udtDataLogger;
    end_if;
  end_if;
end_if;
```

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<p>Current POU: ArchiveValues_Empro</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:15</p>

```

end_if;

if xI3 then
    DataLogReal_V0_18_10(rData:=I3_tcp,
        strColumnName:='I3',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_10.udtDataLogger;
end_if;

if xIn then
    DataLogReal_V0_18_11(rData:=In_tcp,
        strColumnName:='In',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_11.udtDataLogger;
end_if;

if xPt then
    DataLogReal_V0_18_12(rData:=Pt_tcp,
        strColumnName:='Pt',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_12.udtDataLogger;
end_if;

if xQt then
    DataLogReal_V0_18_13(rData:=Qt_tcp,
        strColumnName:='Qt',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_13.udtDataLogger;
end_if;

if xSt_online then
    DataLogReal_V0_18_14(rData:=St_online_tcp,
        strColumnName:='St',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_14.udtDataLogger;
end_if;

if xfdp then
    DataLogReal_V0_18_15(rData:=fdp_tcp,
        strColumnName:='fdp',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_15.udtDataLogger;
end_if;

if xP1 then
    DataLogReal_V0_18_16(rData:=P1_tcp,
        strColumnName:='P1',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_16.udtDataLogger;
end_if;

if xQ1 then
    DataLogReal_V0_18_17(rData:=Q1_tcp,
        strColumnName:='Q1',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_17.udtDataLogger;
end_if;

if xS1 then
    DataLogReal_V0_18_18(rData:=S1_tcp,
        strColumnName:='S1',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_18.udtDataLogger;
end_if;

if xfdp1 then
    DataLogReal_V0_18_19(rData:=fdp1_tcp,
        strColumnName:='fdp1',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_19.udtDataLogger;
end_if;

```

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```

if xP2 then
  DataLogReal_V0_18_20(rData:=P2_tcp,
    strColumnName:='P2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_20.udtDataLogger;
end_if;

if xQ2 then
  DataLogReal_V0_18_21(rData:=Q2_tcp,
    strColumnName:='Q2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_21.udtDataLogger;
end_if;

if xS2 then
  DataLogReal_V0_18_22(rData:=S2_tcp,
    strColumnName:='S2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_22.udtDataLogger;
end_if;

if xfdp2 then
  DataLogReal_V0_18_23(rData:=fdp2_tcp,
    strColumnName:='fdp2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_23.udtDataLogger;
end_if;

if xP3 then
  DataLogReal_V0_18_24(rData:=P3_tcp,
    strColumnName:='P3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_24.udtDataLogger;
end_if;

if xQ3 then
  DataLogReal_V0_18_25(rData:=Q3_tcp,
    strColumnName:='Q3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_25.udtDataLogger;
end_if;

if xS3 then
  DataLogReal_V0_18_26(rData:=S3_tcp,
    strColumnName:='S3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_26.udtDataLogger;
end_if;

if xfdp3 then
  DataLogReal_V0_18_27(rData:=fdp3_tcp,
    strColumnName:='fdp3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_27.udtDataLogger;
end_if;
(*Val advan_tcp_med*)

if xU12_med then
  DataLogReal_V0_18_28(rData:=U12_med_tcp,
    strColumnName:='U12_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_28.udtDataLogger;
end_if;

if xU23_med then
  DataLogReal_V0_18_29(rData:=U23_med_tcp,
    strColumnName:='U23_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_29.udtDataLogger;

```

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```

end_if;

if xU31_med then
  DataLogReal_V0_18_30(rData:=U31_med_tcp,
    strColumnName:='U31_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_30.udtDataLogger;
end_if;

if xV1_med then
  DataLogReal_V0_18_31(rData:=V1_med_tcp,
    strColumnName:='V1_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_31.udtDataLogger;
end_if;

if xV2_med then
  DataLogReal_V0_18_32(rData:=V2_med_tcp,
    strColumnName:='V2_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_32.udtDataLogger;
end_if;

if xV3_med then
  DataLogReal_V0_18_33(rData:=V3_med_tcp,
    strColumnName:='V3_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_33.udtDataLogger;
end_if;

if xfrec_med then
  DataLogReal_V0_18_34(rData:=frec_med_tcp,
    strColumnName:='Frecuencia_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_34.udtDataLogger;
end_if;

if xI1_med then
  DataLogReal_V0_18_35(rData:=I1_med_tcp,
    strColumnName:='I1_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_35.udtDataLogger;
end_if;

if xI2_med then
  DataLogReal_V0_18_36(rData:=I2_med_tcp,
    strColumnName:='I2_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_36.udtDataLogger;
end_if;

if xI3_med then
  DataLogReal_V0_18_37(rData:=I3_med_tcp,
    strColumnName:='I3_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_37.udtDataLogger;
end_if;

if xIn_med then
  DataLogReal_V0_18_38(rData:=In_med_tcp,
    strColumnName:='In_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_38.udtDataLogger;
end_if;

if xPt_med then
  DataLogReal_V0_18_39(rData:=Pt_med_tcp,
    strColumnName:='Pt_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_39.udtDataLogger;
end_if;

```

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```

if xQt_med then
  DataLogReal_V0_18_40(rData:=Qt_med_tcp,
    strColumnName:='Qt_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_40.udtDataLogger;
end_if;

if xSt_online_med then
  DataLogReal_V0_18_41(rData:=St_online_med_tcp,
    strColumnName:='St_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_41.udtDataLogger;
end_if;

(*Valores avan_max*)

if xV1_max then
  DataLogReal_V0_18_42(rData:=V1_max_tcp,
    strColumnName:='V1_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_42.udtDataLogger;
end_if;

if xV2_max then
  DataLogReal_V0_18_43(rData:=V2_max_tcp,
    strColumnName:='V2_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_43.udtDataLogger;
end_if;

if xV3_max then
  DataLogReal_V0_18_44(rData:=V3_max_tcp,
    strColumnName:='V3_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_44.udtDataLogger;
end_if;

if xfrec_max then
  DataLogReal_V0_18_45(rData:=frec_max_tcp,
    strColumnName:='Frecuencia_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_45.udtDataLogger;
end_if;

if xI1_max then
  DataLogReal_V0_18_46(rData:=I1_max_tcp,
    strColumnName:='I1_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_46.udtDataLogger;
end_if;

if xI2_max then
  DataLogReal_V0_18_47(rData:=I2_max_tcp,
    strColumnName:='I2_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_47.udtDataLogger;
end_if;

if xI3_max then
  DataLogReal_V0_18_48(rData:=I3_max_tcp,
    strColumnName:='I3_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_48.udtDataLogger;
end_if;

if xIn_max then
  DataLogReal_V0_18_49(rData:=In_max_tcp,
    strColumnName:='In_max',
    udtDataLogger:=Data);

```

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```

        Data:=DataLogReal_V0_18_49.udtDataLogger;
end_if;

if xPt_max then
    DataLogReal_V0_18_50(rData:=Pt_max_tcp,
        strColumnName:='Pt_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_50.udtDataLogger;
end_if;

if xQt_max then
    DataLogReal_V0_18_51(rData:=Qt_max_tcp,
        strColumnName:='Qt_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_51.udtDataLogger;
end_if;

if xSt_online_max then
    DataLogReal_V0_18_52(rData:=St_online_max_tcp,
        strColumnName:='St_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_52.udtDataLogger;
end_if;

end_if; (*fin tcp*)

```

(*RTU*)

```

if xRTU then
    if xU12 then
        DataLogReal_V0_18_53(rData:=U12_rtu,
            strColumnName:='U12',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_53.udtDataLogger;
    end_if;

    if xU23 then
        DataLogReal_V0_18_54(rData:=U23_rtu,
            strColumnName:='U23',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_54.udtDataLogger;
    end_if;

    if xU31 then
        DataLogReal_V0_18_55(rData:=U31_rtu,
            strColumnName:='U31',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_55.udtDataLogger;
    end_if;

    if xV1 then
        DataLogReal_V0_18_56(rData:=V1_rtu,
            strColumnName:='V1',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_56.udtDataLogger;
    end_if;

    if xV2 then
        DataLogReal_V0_18_57(rData:=V2_rtu,
            strColumnName:='V2',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_57.udtDataLogger;
    end_if;

    if xV3 then
        DataLogReal_V0_18_58(rData:=V3_rtu,
            strColumnName:='V3',
            udtDataLogger:=Data);
        Data:=DataLogReal_V0_18_58.udtDataLogger;
    end_if;

```

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```

if xfrec then
  DataLogReal_V0_18_59(rData:=frec_rtu,
    strColumnName:='Frecuencia',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_59.udtDataLogger;
end_if;

if xI1 then
  DataLogReal_V0_18_60(rData:=I1_rtu,
    strColumnName:='I1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_60.udtDataLogger;
end_if;

if xI2 then
  DataLogReal_V0_18_61(rData:=I2_rtu,
    strColumnName:='I2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_61.udtDataLogger;
end_if;

if xI3 then
  DataLogReal_V0_18_62(rData:=I3_rtu,
    strColumnName:='I3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_62.udtDataLogger;
end_if;

if xIn then
  DataLogReal_V0_18_63(rData:=In_rtu,
    strColumnName:='In',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_63.udtDataLogger;
end_if;

if xPt then
  DataLogReal_V0_18_64(rData:=Pt_rtu,
    strColumnName:='Pt',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_64.udtDataLogger;
end_if;

if xQt then
  DataLogReal_V0_18_65(rData:=Qt_rtu,
    strColumnName:='Qt',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_65.udtDataLogger;
end_if;

if xSt_online then
  DataLogReal_V0_18_66(rData:=St_online_rtu,
    strColumnName:='St',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_66.udtDataLogger;
end_if;

if xfdp then
  DataLogReal_V0_18_67(rData:=fdp_rtu,
    strColumnName:='fdp',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_67.udtDataLogger;
end_if;

if xP1 then
  DataLogReal_V0_18_68(rData:=P1_rtu,
    strColumnName:='P1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_68.udtDataLogger;
end_if;

```

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```

if xQ1 then
  DataLogReal_V0_18_69(rData:=Q1_rtu,
    strColumnName:='Q1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_69.udtDataLogger;
end_if;

if xS1 then
  DataLogReal_V0_18_70(rData:=S1_rtu,
    strColumnName:='S1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_70.udtDataLogger;
end_if;

if xfdp1 then
  DataLogReal_V0_18_71(rData:=fdp1_rtu,
    strColumnName:='fdp1',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_71.udtDataLogger;
end_if;

if xP2 then
  DataLogReal_V0_18_72(rData:=P2_rtu,
    strColumnName:='P2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_72.udtDataLogger;
end_if;

if xQ2 then
  DataLogReal_V0_18_73(rData:=Q2_rtu,
    strColumnName:='Q2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_73.udtDataLogger;
end_if;

if xS2 then
  DataLogReal_V0_18_74(rData:=S2_rtu,
    strColumnName:='S2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_74.udtDataLogger;
end_if;

if xfdp2 then
  DataLogReal_V0_18_75(rData:=fdp2_rtu,
    strColumnName:='fdp2',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_75.udtDataLogger;
end_if;

if xP3 then
  DataLogReal_V0_18_76(rData:=P3_rtu,
    strColumnName:='P3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_76.udtDataLogger;
end_if;

if xQ3 then
  DataLogReal_V0_18_77(rData:=Q3_rtu,
    strColumnName:='Q3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_77.udtDataLogger;
end_if;

if xS3 then
  DataLogReal_V0_18_78(rData:=S3_rtu,
    strColumnName:='S3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_78.udtDataLogger;
end_if;

```

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```

if xfdp3 then
  DataLogReal_V0_18_79(rData:=fdp3_rtu,
    strColumnName:='fdp3',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_79.udtDataLogger;
end_if;

(*Val advan_rtu_med*)

if xU12_med then
  DataLogReal_V0_18_80(rData:=U12_med_rtu,
    strColumnName:='U12_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_80.udtDataLogger;
end_if;

if xU23_med then
  DataLogReal_V0_18_81(rData:=U23_med_rtu,
    strColumnName:='U23_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_81.udtDataLogger;
end_if;

if xU31_med then
  DataLogReal_V0_18_82(rData:=U31_med_rtu,
    strColumnName:='U31_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_82.udtDataLogger;
end_if;

if xV1_med then
  DataLogReal_V0_18_83(rData:=V1_med_rtu,
    strColumnName:='V1_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_83.udtDataLogger;
end_if;

if xV2_med then
  DataLogReal_V0_18_84(rData:=V2_med_rtu,
    strColumnName:='V2_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_84.udtDataLogger;
end_if;

if xV3_med then
  DataLogReal_V0_18_85(rData:=V3_med_rtu,
    strColumnName:='V3_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_85.udtDataLogger;
end_if;

if xfrec_med then
  DataLogReal_V0_18_86(rData:=frec_med_rtu,
    strColumnName:='Frecuencia_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_86.udtDataLogger;
end_if;

if xI1_med then
  DataLogReal_V0_18_87(rData:=I1_med_rtu,
    strColumnName:='I1_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_87.udtDataLogger;
end_if;

if xI2_med then
  DataLogReal_V0_18_88(rData:=I2_med_rtu,
    strColumnName:='I2_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_88.udtDataLogger;
end_if;

```

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```

if xI3_med then
  DataLogReal_V0_18_89(rData:=I3_med_rtu,
    strColumnName:='I3_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_89.udtDataLogger;
end_if;

if xIn_med then
  DataLogReal_V0_18_90(rData:=In_med_rtu,
    strColumnName:='In_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_90.udtDataLogger;
end_if;

if xPt_med then
  DataLogReal_V0_18_91(rData:=Pt_med_rtu,
    strColumnName:='Pt_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_91.udtDataLogger;
end_if;

if xQt_med then
  DataLogReal_V0_18_92(rData:=Qt_med_rtu,
    strColumnName:='Qt_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_92.udtDataLogger;
end_if;

if xSt_online_med then
  DataLogReal_V0_18_93(rData:=St_online_med_rtu,
    strColumnName:='St_med',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_93.udtDataLogger;
end_if;

(*Valores avan_max*)

if xV1_max then
  DataLogReal_V0_18_94(rData:=V1_max_rtu,
    strColumnName:='V1_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_94.udtDataLogger;
end_if;

if xV2_max then
  DataLogReal_V0_18_95(rData:=V2_max_rtu,
    strColumnName:='V2_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_95.udtDataLogger;
end_if;

if xV3_max then
  DataLogReal_V0_18_96(rData:=V3_max_rtu,
    strColumnName:='V3_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_96.udtDataLogger;
end_if;

if xfrec_max then
  DataLogReal_V0_18_97(rData:=frec_max_rtu,
    strColumnName:='Frecuencia_max',
    udtDataLogger:=Data);
  Data:=DataLogReal_V0_18_97.udtDataLogger;
end_if;

if xI1_max then
  DataLogReal_V0_18_98(rData:=I1_max_rtu,
    strColumnName:='I1_max',
    udtDataLogger:=Data);

```

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```

        Data:=DataLogReal_V0_18_98.udtDataLogger;
end_if;

if xI2_max then
    DataLogReal_V0_18_99(rData:=I2_max_rtu,
        strColumnName:='I2_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_99.udtDataLogger;
end_if;

if xI3_max then
    DataLogReal_V0_18_100(rData:=I3_max_rtu,
        strColumnName:='I3_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_100.udtDataLogger;
end_if;

if xIn_max then
    DataLogReal_V0_18_101(rData:=In_max_rtu,
        strColumnName:='In_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_101.udtDataLogger;
end_if;

if xPt_max then
    DataLogReal_V0_18_102(rData:=Pt_max_rtu,
        strColumnName:='Pt_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_102.udtDataLogger;
end_if;

if xQt_max then
    DataLogReal_V0_18_103(rData:=Qt_max_rtu,
        strColumnName:='Qt_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_103.udtDataLogger;
end_if;

if xSt_online_max then
    DataLogReal_V0_18_104(rData:=St_online_max_rtu,
        strColumnName:='St_max',
        udtDataLogger:=Data);
    Data:=DataLogReal_V0_18_104.udtDataLogger;
end_if;

end_if;(*fin rtu*)

(*end_if;    (*fin empro*)

```

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<p>Current POU: ArchiveValues_Empro</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:18</p>

POU: ArchiveValues_PulsesS0, hoja de trabajo: ArchiveValues_PulsesS0

```
(*ARCHIVE VALUES PULSES S0*)

(*if xVal_PulseS0 then*)

  if xNombre then
    DataLogStr_V0_18_1(strData:=Entrada,
      strColumnName:='Input',
      udtDataLogger:=Data);
    Data:=DataLogStr_V0_18_1.udtDataLogger;
  end_if;

  (*if xContador then
    DataLogInt_V0_18_1(iData:=Contador,
      strColumnName:='Numero de Pulsos',
      udtDataLogger:=Data);
    Data:=DataLogInt_V0_18_1.udtDataLogger;
  end_if;*)

  if xConsumo then
    DataLogInt_V0_18_2(iData:=Consumo_sal,
      strColumnName:='Consumo',
      udtDataLogger:=Data);
    Data:=DataLogInt_V0_18_2.udtDataLogger;
  end_if;

  if xValorPulso then
    DataLogInt_V0_18_3(iData:=Valor_Pulso_sal,
      strColumnName:='Valor del pulso',
      udtDataLogger:=Data);
    Data:=DataLogInt_V0_18_3.udtDataLogger;
  end_if;

  if xUnidades then
    DataLogStr_V0_18_2(strData:=Unidades_sal,
      strColumnName:='Unidades',
      udtDataLogger:=Data);
    Data:=DataLogStr_V0_18_2.udtDataLogger;
  end_if;

(*end_if; (*fin pulsesS0*)
```

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Current POU: ArchiveValues_PulsesS0	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:18

POU: StrBBDD, hoja de trabajo: StrBBDD

```
BUF_TO_STRING_1(REQ:=true(* BOOL *),
  BUF_FORMAT:=true(* BOOL *),
  BUF_OFFS:= buf_offs(*DINT *),
  BUF_CNT:= buf_cnt(* DINT *),
  BUFFER:=ascii_comilla(* ANY *),
  DST:=comilla(* ANY *));
(* BOOL *)done_buftostr:=BUF_TO_STRING_1.DONE;
(* BOOL *)xError_buftostr:=BUF_TO_STRING_1.ERROR;
(* INT *)(*:=BUF_TO_STRING_1.STATUS;
(*:=BUF_TO_STRING_1.STATUS;
(* ANY *)comilla:=BUF_TO_STRING_1.DST;
```

```
BUF_TO_STRING_2(REQ:=true(* BOOL *),
  BUF_FORMAT:=true(* BOOL *),
  BUF_OFFS:=buf_offs(* DINT *),
  BUF_CNT:=buf_cnt(* DINT *),
  BUFFER:=ascii_coma(* ANY *),
  DST:=coma(* ANY *));
(* BOOL *)xdone_coma:=BUF_TO_STRING_2.DONE;
(* BOOL *)(*:=BUF_TO_STRING_2.ERROR;
(*:=BUF_TO_STRING_2.ERROR;
(*:=BUF_TO_STRING_2.STATUS;
(* ANY *)coma:=BUF_TO_STRING_2.DST;
```

```
unid_prin:=CONCAT(comilla, Unidades_sal);
unid_med:=CONCAT(unid_prin,comilla);
Unidades_BBDD:=CONCAT(unid_med,coma);
```

```
input_prin:=CONCAT(comilla,Entrada);
input_med:=CONCAT(input_prin,comilla);
Entrada_BBDD:=CONCAT(input_med,coma);
```

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Current POU: StrBBDD	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:18

POU: Sel_Val, hoja de trabajo: Sel_Val

```
SelectTCPRTU_2(INPUT_TCP:=U12_tcp,  
INPUT_RTU:=U12_rtu(* REAL *));  
(* REAL *)U12:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_3(INPUT_TCP:=U23_tcp,  
INPUT_RTU:=U23_rtu(* REAL *));  
(* REAL *)U23:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_4(INPUT_TCP:=U31_tcp,  
INPUT_RTU:=U31_rtu(* REAL *));  
(* REAL *)U31:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_5(INPUT_TCP:=V1_tcp,  
INPUT_RTU:=V1_rtu(* REAL *));  
(* REAL *)V1:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_6(INPUT_TCP:=V2_tcp,  
INPUT_RTU:=V2_rtu(* REAL *));  
(* REAL *)V2:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_7(INPUT_TCP:=V3_tcp,  
INPUT_RTU:=V3_rtu(* REAL *));  
(* REAL *)V3:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_8(INPUT_TCP:=I1_tcp,  
INPUT_RTU:=I1_rtu(* REAL *));  
(* REAL *)I1:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_9(INPUT_TCP:=I2_tcp,  
INPUT_RTU:=I2_rtu(* REAL *));  
(* REAL *)I2:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_10(INPUT_TCP:=I3_tcp,  
INPUT_RTU:=I3_rtu(* REAL *));  
(* REAL *)I3:=SelectTCPRTU_2.salida;
```

```
SelectTCPRTU_11(INPUT_TCP:=In_tcp,  
INPUT_RTU:=In_rtu(* REAL *));  
(* REAL *)In:=SelectTCPRTU_2.salida;
```

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Current POU: Sel_Val	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:18

POU: SelectTCPRTU, hoja de trabajo: SelectTCPRTU

```
IF xTCP THEN
  salida:=INPUT_TCP;
ELSE IF xRTU THEN
  salida:=INPUT_RTU;
END_IF;
END_IF;
```

```
V001 := V001 ;
```

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Current POU: SelectTCPRTU	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:19

POU: BBDD_Write, hoja de trabajo: BBDD_Write

```
xActivarConexion_BBDD:=BBDD_Habilitar;
strUser_BBDD:=BBDD_User;
strPassWord_BBDD:=BBDD_Password;
strIP_BBDD:=BBDD_IP;
strName_BBDD:=BBDD_Name;
```

```
SendBuffer.Mode:=1;
```

```
DBFL_MySQL_ACCESS_V1_15_1(IP_ACTIVATE:=xActivarConexion_BBDD,
DB_ACTIVATE:=xConectar_BBDD,
DB_USER:=strUser_BBDD,(*'user1',*)
DB_PASSWORD:=strPassWord_BBDD,(*'1234',*)
IP_ADDRESS:=strIP_BBDD,(*'192.168.1.110'*)(* STRING *)
IP_PORT:='3306'(* STRING *),
DB_NAME:=strName_BBDD,(*'tfm_v01'(*'tfm_v01'(* STRING *)
TIME_OUT:=time#10s(* TIME *),
(*NO_KEEPA_LIVE:=(* BOOL *)(*,
(*,
SQL_IN:=SendBuffer.Data(* DBFL_ARR_BYTE_0_1439 *),
RCV_BUFFER:=ReceiveBuffer(* DBFL_ARR_BYTE_0_1439 *));
(* BOOL *)xBBDD_TCP_Ready:=DBFL_MySQL_ACCESS_V1_15_1.TCP_READY;
(* BOOL *)xBBDD_SQL_Ready:=DBFL_MySQL_ACCESS_V1_15_1.SQL_READY;
(* BOOL *)xBBDD_SQL_DONE:=DBFL_MySQL_ACCESS_V1_15_1.SQL_DONE;
(*(* DBFL_UDT_MySQL_Server_Info *)(*:=DBFL_MySQL_ACCESS_V1_15_1.SQL_SERVER_INFO;
(*:=DBFL_MySQL_ACCESS_V1_15_1.SQL_SERVER_INFO;
(*(* DINT *)xtcpstatus_bbdd:=DBFL_MySQL_ACCESS_V1_15_1.TCP_STATUS;
(*(* DINT *)(*:=DBFL_MySQL_ACCESS_V1_15_1.SQL_STATUS;
(*:=DBFL_MySQL_ACCESS_V1_15_1.SQL_STATUS;
(* DINT *)diSizDat:=DBFL_MySQL_ACCESS_V1_15_1.RCV_SIZE;
(* DINT *)diRowCnt:=DBFL_MySQL_ACCESS_V1_15_1.ROW_CNT;
(* DINT *)diColCnt:=DBFL_MySQL_ACCESS_V1_15_1.COL_CNT;
(* DBFL_ARR_BYTE_0_1439 *)SendBuffer.Data:=DBFL_MySQL_ACCESS_V1_15_1.SQL_IN;
(* DBFL_ARR_BYTE_0_1439 *)ReceiveBuffer:=DBFL_MySQL_ACCESS_V1_15_1.RCV_BUFFER;
```

```
if (xBBDD_TCP_Ready and xBBDD_SQL_Ready) then
  Act_periodicamente_1(xInput:=true,
  time_pul:=t#1s);
  xBBDD_Almacenar:=Act_periodicamente_1.xSal;
  else Act_periodicamente_1.xInput:=false;;
END_IF;
```

```
DBFL_StartComT2_V1_01_1(IN_xActivate:=xBBDD_Almacenar,
IN_strStartString:=strBBDD_StartCommand,
INOUT_udtComBuffer:=SendBuffer);
xOUTStartCom:=DBFL_StartComT2_V1_01_1.OUT_DataValid;
SendBuffer:=DBFL_StartComT2_V1_01_1.INOUT_udtComBuffer;
```

```
(*FECHA*)
DBFL_DateTimeStrT2_V1_02_1(IN_xActivate:=xOUTStartCom,
IN_iYear:=RTC_YEAR,
IN_iMonth:=RTC_MONTH,
IN_iDay:=RTC_DAY,
IN_iHour:=RTC_HOURS,
IN_iMinute:=RTC_MINUTES,
IN_iSecond:=RTC_SECONDS,
IN_bLastChar:=Byte_NotLastChar,
INOUT_udtComBuffer:=SendBuffer);
xOUTDateTime:=DBFL_DateTimeStrT2_V1_02_1.OUT_DataValid;
SendBuffer:=DBFL_DateTimeStrT2_V1_02_1.INOUT_udtComBuffer;
```

```
(*NOMBRE PULSES S0*)
DBFL_StrToComT2_V1_01_2(IN_xActivate:=xOUTDateTime,
IN_strString:=Entrada_BBDD,
INOUT_udtComBuffer:=SendBuffer);
xOUTEntrada:=DBFL_StrToComT2_V1_01_2.OUT_DataValid;
SendBuffer:=DBFL_StrToComT2_V1_01_2.INOUT_udtComBuffer;
```

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```

(*VALOR PULSO*)
DBFL_IntToComT2_V1_01_1(IN_xActivate:=xOUTEntrada,
    IN_iValue:=Valor_Pulso_sal,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTValPulso:=DBFL_IntToComT2_V1_01_1.OUT_DataValid;
SendBuffer:=DBFL_IntToComT2_V1_01_1.INOUT_udtComBuffer;

(*Consumo*)
DBFL_IntToComT2_V1_01_2(IN_xActivate:=xOUTValPulso,
    IN_iValue:=Consumo_sal,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTConsumo:=DBFL_IntToComT2_V1_01_2.OUT_DataValid;
SendBuffer:=DBFL_IntToComT2_V1_01_2.INOUT_udtComBuffer;

(*UNIDADES*)
DBFL_StrToComT2_V1_01_3(IN_xActivate:=xOUTConsumo,
    IN_strString:=Unidades_BBDD,
    INOUT_udtComBuffer:=SendBuffer);
xOUTUnidades:=DBFL_StrToComT2_V1_01_3.OUT_DataValid;
SendBuffer:=DBFL_StrToComT2_V1_01_3.INOUT_udtComBuffer;

(*U12*)
DBFL_RealToComT2_V1_01_2(IN_xActivate:=xOUTUnidades,
    IN_rValue:=U12,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTU12:=DBFL_RealToComT2_V1_01_2.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_2.INOUT_udtComBuffer;

(*U23*)
DBFL_RealToComT2_V1_01_5(IN_xActivate:=xOUTU12,
    IN_rValue:=U23,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTU23:=DBFL_RealToComT2_V1_01_5.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_5.INOUT_udtComBuffer;

(*U31*)
DBFL_RealToComT2_V1_01_6(IN_xActivate:=xOUTU23,
    IN_rValue:=U31,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTU31:=DBFL_RealToComT2_V1_01_6.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_6.INOUT_udtComBuffer;

(*V1*)
DBFL_RealToComT2_V1_01_7(IN_xActivate:=xOUTU31,
    IN_rValue:=V1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV1:=DBFL_RealToComT2_V1_01_7.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_7.INOUT_udtComBuffer;

(*V2*)
DBFL_RealToComT2_V1_01_8(IN_xActivate:=xOUTV1,
    IN_rValue:=V2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV2:=DBFL_RealToComT2_V1_01_8.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_8.INOUT_udtComBuffer;

(*V3*)
DBFL_RealToComT2_V1_01_9(IN_xActivate:=xOUTV2,
    IN_rValue:=V3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV3:=DBFL_RealToComT2_V1_01_9.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_9.INOUT_udtComBuffer;

```

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```

(*I1*)
DBFL_RealToComT2_V1_01_10(IN_xActivate:=xOUTV3,
    IN_rValue:=I1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI1:=DBFL_RealToComT2_V1_01_10.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_10.INOUT_udtComBuffer;

(*I2*)
DBFL_RealToComT2_V1_01_11(IN_xActivate:=xOUTI1,
    IN_rValue:=I2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI2:=DBFL_RealToComT2_V1_01_11.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_11.INOUT_udtComBuffer;

(*I3*)
DBFL_RealToComT2_V1_01_12(IN_xActivate:=xOUTI2,
    IN_rValue:=I3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI3:=DBFL_RealToComT2_V1_01_12.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_12.INOUT_udtComBuffer;

(*In*)
DBFL_RealToComT2_V1_01_13(IN_xActivate:=xOUTI3,
    IN_rValue:=In,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTIn:=DBFL_RealToComT2_V1_01_13.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_13.INOUT_udtComBuffer;

(*Frec*)
DBFL_RealToComT2_V1_01_14(IN_xActivate:=xOUTIn,
    IN_rValue:=Frec,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTFrec:=DBFL_RealToComT2_V1_01_14.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_14.INOUT_udtComBuffer;

(*Pt*)
DBFL_RealToComT2_V1_01_15(IN_xActivate:=xOUTFrec,
    IN_rValue:=Pt,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPt:=DBFL_RealToComT2_V1_01_15.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_15.INOUT_udtComBuffer;

(*Qt*)
DBFL_RealToComT2_V1_01_30(IN_xActivate:=xOUTPt,
    IN_rValue:=Qt,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTQt:=DBFL_RealToComT2_V1_01_30.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_30.INOUT_udtComBuffer;

(*S_t*)
DBFL_RealToComT2_V1_01_29(IN_xActivate:=xOUTQt,
    IN_rValue:=S_t,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTSt:=DBFL_RealToComT2_V1_01_29.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_29.INOUT_udtComBuffer;

(*fdpt*)
DBFL_RealToComT2_V1_01_16(IN_xActivate:=xOUTSt,
    IN_rValue:=fdpt,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTfdpt:=DBFL_RealToComT2_V1_01_16.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_16.INOUT_udtComBuffer;

```

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```

(*P1*)
DBFL_RealToComT2_V1_01_17(IN_xActivate:=xOUTfdpt,
    IN_rValue:=P1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTP1:=DBFL_RealToComT2_V1_01_17.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_17.INOUT_udtComBuffer;

(*Q1*)
DBFL_RealToComT2_V1_01_18(IN_xActivate:=xOUTP1,
    IN_rValue:=Q1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTQ1:=DBFL_RealToComT2_V1_01_18.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_18.INOUT_udtComBuffer;

(*S1*)
DBFL_RealToComT2_V1_01_19(IN_xActivate:=xOUTQ1,
    IN_rValue:=S1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTS1:=DBFL_RealToComT2_V1_01_19.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_19.INOUT_udtComBuffer;

(*fdp1*)
DBFL_RealToComT2_V1_01_20(IN_xActivate:=xOUTS1,
    IN_rValue:=fdp1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTfdp1:=DBFL_RealToComT2_V1_01_20.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_20.INOUT_udtComBuffer;

(*P2*)
DBFL_RealToComT2_V1_01_21(IN_xActivate:=xOUTfdp1,
    IN_rValue:=P2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTP2:=DBFL_RealToComT2_V1_01_21.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_21.INOUT_udtComBuffer;

(*Q2*)
DBFL_RealToComT2_V1_01_22(IN_xActivate:=xOUTP2,
    IN_rValue:=Q2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTQ2:=DBFL_RealToComT2_V1_01_22.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_22.INOUT_udtComBuffer;

(*S2*)
DBFL_RealToComT2_V1_01_23(IN_xActivate:=xOUTQ2,
    IN_rValue:=S2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTS2:=DBFL_RealToComT2_V1_01_23.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_23.INOUT_udtComBuffer;

(*fdp2*)
DBFL_RealToComT2_V1_01_24(IN_xActivate:=xOUTS2,
    IN_rValue:=fdp2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTfdp2:=DBFL_RealToComT2_V1_01_24.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_24.INOUT_udtComBuffer;

(*P3*)
DBFL_RealToComT2_V1_01_25(IN_xActivate:=xOUTfdp2,
    IN_rValue:=P3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTP3:=DBFL_RealToComT2_V1_01_25.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_25.INOUT_udtComBuffer;

```

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```

(*Q3*)
DBFL_RealToComT2_V1_01_26(IN_xActivate:=xOUTP3,
  IN_rValue:=Q3,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTQ3:=DBFL_RealToComT2_V1_01_26.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_26.INOUT_udtComBuffer;

(*S3*)
DBFL_RealToComT2_V1_01_27(IN_xActivate:=xOUTQ3,
  IN_rValue:=S3,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTS3:=DBFL_RealToComT2_V1_01_27.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_27.INOUT_udtComBuffer;

(*fdp3*)
DBFL_RealToComT2_V1_01_28(IN_xActivate:=xOUTS3,
  IN_rValue:=fdp3,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTfdp3:=DBFL_RealToComT2_V1_01_28.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_28.INOUT_udtComBuffer;

(*U12_med*)
DBFL_RealToComT2_V1_01_31(IN_xActivate:=xOUTfdp3,
  IN_rValue:=U12_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTU12:=DBFL_RealToComT2_V1_01_31.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_31.INOUT_udtComBuffer;

(*U23_med*)
DBFL_RealToComT2_V1_01_32(IN_xActivate:=xOUTU12,
  IN_rValue:=U23_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTU23_med:=DBFL_RealToComT2_V1_01_32.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_32.INOUT_udtComBuffer;

(*U31_med*)
DBFL_RealToComT2_V1_01_33(IN_xActivate:=xOUTU23_med,
  IN_rValue:=U31_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTU31_med:=DBFL_RealToComT2_V1_01_33.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_33.INOUT_udtComBuffer;

(*V1_med*)
DBFL_RealToComT2_V1_01_35(IN_xActivate:=xOUTU31_med,
  IN_rValue:=V1_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTV1_med:=DBFL_RealToComT2_V1_01_35.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_35.INOUT_udtComBuffer;

(*V2_med*)
DBFL_RealToComT2_V1_01_34(IN_xActivate:=xOUTV1_med,
  IN_rValue:=V2_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTV2_med:=DBFL_RealToComT2_V1_01_34.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_34.INOUT_udtComBuffer;

(*V3_med*)
DBFL_RealToComT2_V1_01_36(IN_xActivate:=xOUTV2_med,
  IN_rValue:=V3_med,
  IN_bLastChar:=Byte_NotLastChar,
  INOUT_udtComBuffer:=SendBuffer);
xOUTV3_med:=DBFL_RealToComT2_V1_01_36.OUT_DataValid;

```

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```

        SendBuffer:=DBFL_RealToComT2_V1_01_36.INOUT_udtComBuffer;

(*Pt_med*)
DBFL_RealToComT2_V1_01_37(IN_xActivate:=xOUTV3_med,
    IN_rValue:=Pt_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPt_med:=DBFL_RealToComT2_V1_01_37.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_37.INOUT_udtComBuffer;

(*Qt_med*)
DBFL_RealToComT2_V1_01_38(IN_xActivate:=xOUTPt_med,
    IN_rValue:=Qt_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTQt_med:=DBFL_RealToComT2_V1_01_38.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_38.INOUT_udtComBuffer;

(*St_med*)
DBFL_RealToComT2_V1_01_39(IN_xActivate:=xOUTQt_med,
    IN_rValue:=St_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTSt_med:=DBFL_RealToComT2_V1_01_39.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_39.INOUT_udtComBuffer;

(*I1_med*)
DBFL_RealToComT2_V1_01_40(IN_xActivate:=xOUTSt_med,
    IN_rValue:=I1_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI1_med:=DBFL_RealToComT2_V1_01_40.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_40.INOUT_udtComBuffer;

(*I2_med*)
DBFL_RealToComT2_V1_01_41(IN_xActivate:=xOUTI1_med,
    IN_rValue:=I2_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI2_med:=DBFL_RealToComT2_V1_01_41.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_41.INOUT_udtComBuffer;

(*I3_med*)
DBFL_RealToComT2_V1_01_42(IN_xActivate:=xOUTI2_med,
    IN_rValue:=I3_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI3_med:=DBFL_RealToComT2_V1_01_42.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_42.INOUT_udtComBuffer;

(*In_med*)
DBFL_RealToComT2_V1_01_43(IN_xActivate:=xOUTI3_med,
    IN_rValue:=In_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTIn_med:=DBFL_RealToComT2_V1_01_43.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_43.INOUT_udtComBuffer;

(*Frec_med*)
DBFL_RealToComT2_V1_01_44(IN_xActivate:=xOUTIn_med,
    IN_rValue:=Frec_med,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTFrec_med:=DBFL_RealToComT2_V1_01_44.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_44.INOUT_udtComBuffer;

(*V1_max*)
DBFL_RealToComT2_V1_01_45(IN_xActivate:=xOUTFrec_med,
    IN_rValue:=V1_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV1_max:=DBFL_RealToComT2_V1_01_45.OUT_DataValid;

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        SendBuffer:=DBFL_RealToComT2_V1_01_45.INOUT_udtComBuffer;

(*V2_max*)
DBFL_RealToComT2_V1_01_46(IN_xActivate:=xOUTV1_max,
    IN_rValue:=V2_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV2_max:=DBFL_RealToComT2_V1_01_46.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_46.INOUT_udtComBuffer;

(*V3_max*)
DBFL_RealToComT2_V1_01_47(IN_xActivate:=xOUTV2_max,
    IN_rValue:=V3_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTV3_max:=DBFL_RealToComT2_V1_01_47.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_47.INOUT_udtComBuffer;

(*Pt_max*)
DBFL_RealToComT2_V1_01_48(IN_xActivate:=xOUTV3_max,
    IN_rValue:=Pt_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPt_max:=DBFL_RealToComT2_V1_01_48.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_48.INOUT_udtComBuffer;

(*Qt_max*)
DBFL_RealToComT2_V1_01_49(IN_xActivate:=xOUTPt_max,
    IN_rValue:=Qt_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTQt_max:=DBFL_RealToComT2_V1_01_49.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_49.INOUT_udtComBuffer;

(*St_max*)
DBFL_RealToComT2_V1_01_50(IN_xActivate:=xOUTQt_max,
    IN_rValue:=St_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTSt_max:=DBFL_RealToComT2_V1_01_50.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_50.INOUT_udtComBuffer;

(*I1_max*)
DBFL_RealToComT2_V1_01_51(IN_xActivate:=xOUTSt_max,
    IN_rValue:=I1_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI1_max:=DBFL_RealToComT2_V1_01_51.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_51.INOUT_udtComBuffer;

(*I2_max*)
DBFL_RealToComT2_V1_01_52(IN_xActivate:=xOUTI1_max,
    IN_rValue:=I2_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI2_max:=DBFL_RealToComT2_V1_01_52.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_52.INOUT_udtComBuffer;

(*I3_max*)
DBFL_RealToComT2_V1_01_53(IN_xActivate:=xOUTI2_max,
    IN_rValue:=I3_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTI3_max:=DBFL_RealToComT2_V1_01_53.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_53.INOUT_udtComBuffer;

(*In_max*)
DBFL_RealToComT2_V1_01_54(IN_xActivate:=xOUTI3_max,
    IN_rValue:=In_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTIn_max:=DBFL_RealToComT2_V1_01_54.OUT_DataValid;

```

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```

        SendBuffer:=DBFL_RealToComT2_V1_01_54.INOUT_udtComBuffer;

(*Frec_max*)
DBFL_RealToComT2_V1_01_55(IN_xActivate:=xOUTIn_max,
    IN_rValue:=Frec_max,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTFrec_max:=DBFL_RealToComT2_V1_01_55.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_55.INOUT_udtComBuffer;

(*PT100*)
DBFL_RealToComT2_V1_01_56(IN_xActivate:=xOUTFrec_max,
    IN_rValue:=Temperatura01,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTpt100:=DBFL_RealToComT2_V1_01_56.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_56.INOUT_udtComBuffer;

(*PM_V1*)
DBFL_RealToComT2_V1_01_57(IN_xActivate:=xOUTpt100,
    IN_rValue:=PM_V1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V1:=DBFL_RealToComT2_V1_01_57.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_57.INOUT_udtComBuffer;

(*PM_V2*)
DBFL_RealToComT2_V1_01_58(IN_xActivate:=xOUTPM_V1,
    IN_rValue:=PM_V2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V2:=DBFL_RealToComT2_V1_01_58.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_58.INOUT_udtComBuffer;

(*PM_V3*)
DBFL_RealToComT2_V1_01_59(IN_xActivate:=xOUTPM_V2,
    IN_rValue:=PM_V3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V3:=DBFL_RealToComT2_V1_01_59.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_59.INOUT_udtComBuffer;

(*PM_I1*)
DBFL_RealToComT2_V1_01_60(IN_xActivate:=xOUTPM_V3,
    IN_rValue:=PM_I1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_I1:=DBFL_RealToComT2_V1_01_60.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_60.INOUT_udtComBuffer;

(*PM_I2*)
DBFL_RealToComT2_V1_01_61(IN_xActivate:=xOUTPM_I1,
    IN_rValue:=PM_I2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_I2:=DBFL_RealToComT2_V1_01_61.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_61.INOUT_udtComBuffer;

(*PM_I3*)
DBFL_RealToComT2_V1_01_62(IN_xActivate:=xOUTPM_I2,
    IN_rValue:=PM_I3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_I3:=DBFL_RealToComT2_V1_01_62.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_62.INOUT_udtComBuffer;

(*PM_In*)
DBFL_RealToComT2_V1_01_63(IN_xActivate:=xOUTPM_I3,
    IN_rValue:=PM_In,

```

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```

    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_In:=DBFL_RealToComT2_V1_01_63.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_63.INOUT_udtComBuffer;

(*PM_P1*)
DBFL_RealToComT2_V1_01_64(IN_xActivate:=xOUTPM_In,
    IN_rValue:=PM_P1,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_P1:=DBFL_RealToComT2_V1_01_64.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_64.INOUT_udtComBuffer;

(*PM_P2*)
DBFL_RealToComT2_V1_01_65(IN_xActivate:=xOUTPM_P1,
    IN_rValue:=PM_P2,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_P2:=DBFL_RealToComT2_V1_01_65.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_65.INOUT_udtComBuffer;

(*PM_P3*)
DBFL_RealToComT2_V1_01_66(IN_xActivate:=xOUTPM_P2,
    IN_rValue:=PM_P3,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_P3:=DBFL_RealToComT2_V1_01_66.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_66.INOUT_udtComBuffer;

(*PM_Pt*)
DBFL_RealToComT2_V1_01_67(IN_xActivate:=xOUTPM_P3,
    IN_rValue:=PM_Pt,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_Pt:=DBFL_RealToComT2_V1_01_67.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_67.INOUT_udtComBuffer;

(*PM_V12*)
DBFL_RealToComT2_V1_01_68(IN_xActivate:=xOUTPM_Pt,
    IN_rValue:=PM_V12,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V12:=DBFL_RealToComT2_V1_01_68.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_68.INOUT_udtComBuffer;

(*PM_V23*)
DBFL_RealToComT2_V1_01_69(IN_xActivate:=xOUTPM_V12,
    IN_rValue:=PM_V23,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V23:=DBFL_RealToComT2_V1_01_69.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_69.INOUT_udtComBuffer;

(*PM_V31*)
DBFL_RealToComT2_V1_01_70(IN_xActivate:=xOUTPM_V23,
    IN_rValue:=PM_V31,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTPM_V31:=DBFL_RealToComT2_V1_01_70.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_70.INOUT_udtComBuffer;

(*PM_Frec*)
DBFL_RealToComT2_V1_01_71(IN_xActivate:=xOUTPM_V31,
    IN_rValue:=PM_Frec,
    IN_bLastChar:=Byte_NotLastChar,
    INOUT_udtComBuffer:=SendBuffer);
xOUTIOLink:=DBFL_RealToComT2_V1_01_71.OUT_DataValid;
SendBuffer:=DBFL_RealToComT2_V1_01_71.INOUT_udtComBuffer;

(*IOLink_Puerto1*)

```

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```
DBFL_RealToComT2_V1_01_72(IN_xActivate:=xOUTIOLink,  
  IN_rValue:=Salida_IOLink,  
  IN_bLastChar:=Byte_LastChar,  
  INOUT_udtComBuffer:=SendBuffer);  
xConectar_BBDD:=DBFL_RealToComT2_V1_01_71.OUT_DataValid;  
SendBuffer:=DBFL_RealToComT2_V1_01_72.INOUT_udtComBuffer;
```

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Current POU: BBDD_Write	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:23

POU: Email, hoja de trabajo: Email

```

strAsunto:=WV_Asunto;
Destinatarios.AddressList[1]:=WV_Destinatario;
strMensaje:=WV_Mensaje;
strServer_Address:=WV_ServerAddr;
strIP_Server_Address:=WV_IP_ServerAddress;
strRemitente:=WV_Remitente;
strUser:=WV_User;
strPassword:=WV_Password;

Destinatarios.AddressCnt:=1;
(*FileNames[1]:= 'C:\Documents and Settings\User\Mis documentos\FTP_exchange_data\hello';
*)

if xOpcion_Mail THEN

    if xnewFile_CSV_PLC then
        xActivar_Mail:=TRUE;
    END_IF;
    IF xDone_Mail then
        xActivar_Mail:=False;
    end_if;

    FileNames[1]:=strLastFile_csv;(*strLastFile_ftp;*)
    SMTP_Client_V1_16_1(xSendMail:=xActivar_Mail, (*and xDummy1,*)
        strSubject:=strAsunto,
        xAuthentication:=TRUE,
        xFileAttachment:=TRUE,
        iFileAttachmentCnt:=1,
        xHostname:=TRUE,
        xTextAsBuffer:=FALSE,
        (*iTextBufferSize:=,(* INT *)
        (*strTimeZone:=,(* SMTP_STR_5*)
        tTimeout:=t#30s,
        strPort:='25',
        udtMailTo:=Destinatarios(* SMTP_UDT_EmailAddress_V1 *),
        strText:=strMensaje,(* SMTP_STR_200 *)
        bFirstByteOfTextBuffer:=FirstByte(* BYTE *),
        arrFileNames:=FileNames,(* SMTP_ARR_STR_1_10 *)
        strSMTP_ServerAddress:=strServer_Address(* STRING *),
        strDNS_IP_Address:=strIP_Server_Address(* STRING *),
        strMailFrom:=strRemitente(* STRING *),
        strUser:=strUser(* STRING *),
        strPassword:=strPassword(* STRING *),
        strDataRecStr:=strDataRec(* SMTP_STR_200 *));

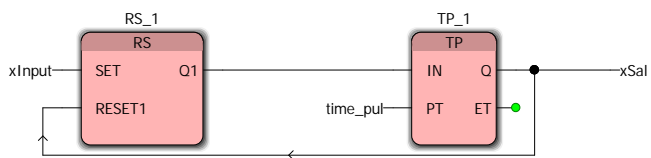
    (* BOOL *)xDone_Mail:=SMTP_Client_V1_16_1.xDONE;
    (* BOOL *)xError_mail:=SMTP_Client_V1_16_1.xERROR;
    (* WORD *)xWDiagCode:=SMTP_Client_V1_16_1.wDiagCode;
    (* WORD *)wADDIDIAGCODE:=SMTP_Client_V1_16_1.wAddDiagCode;
    (* SMTP_UDT_EmailAddress_V1 *)Destinatarios:=SMTP_Client_V1_16_1.udtMailTo;
    (* SMTP_STR_200 *)strMensaje:=SMTP_Client_V1_16_1.strText;
    (* BYTE *)FirstByte:=SMTP_Client_V1_16_1.bFirstByteOfTextBuffer;
    (* SMTP_ARR_STR_1_10 *)FileNames:=SMTP_Client_V1_16_1.arrFileNames;
    (* STRING *)strServer_Address:=SMTP_Client_V1_16_1.strSMTP_ServerAddress;
    (* STRING *)strIP_Server_Address:=SMTP_Client_V1_16_1.strDNS_IP_Address;
    (* STRING *)strRemitente:=SMTP_Client_V1_16_1.strMailFrom;
    (* STRING *)strUser:=SMTP_Client_V1_16_1.strUser;
    (* STRING *)strPassword:=SMTP_Client_V1_16_1.strPassword;
    (* SMTP_STR_200 *)strDataRec:=SMTP_Client_V1_16_1.strDataRecStr;

END_IF;

```

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<p>Current POU: Email</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:23</p>

POU: Act_periodicamente, hoja de trabajo: Act_periodicamente



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Current POU: Act_periodicamente	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:24

POU: FTP_Settings, hoja de trabajo: FTP_Settings

```
(*Variables Visualizacion_FTP*)
str_FileName:=WVis_FileName;
str_IPserver:=WVis_IPserver;
str_User_ftp:=WVis_User;
str_password_ftp:=WVis_Password;
xHabilitar_CSV:=WVis_CSV;

(*Si el usuario pulsa almacenar, se activan dos datalogger para el almacenamiento de
ficheros .csv en un servidor FTP y almacenamiento local en la memoria del PLC*)
IF xAlmacenar then
    xActivar_Datalogger:=true;
    Act_periodicamente_3(xInput:=xReady_Datalogger_FTP,
        time_pul:=temporizacion_FTP);
    xReq_Datalogger_FTP:=Act_periodicamente_3.xSal;
    Act_periodicamente_4(xInput:=xReady_Datalogger_PLC,
        time_pul:=temporizacion_PLC);
    xReq_Datalogger_PLC:=Act_periodicamente_4.xSal;
end_if;

(*DATALOGGER PARA ALMACENAMIENTO DE DATOS CADA 3 MINUTOS EN FTP*)
DataLogger_V0_18_2(
    xActivate:=xActivar_Datalogger,
    xReq:=xReq_Datalogger_FTP,
    xAddTimeToRow:=xAddTime,
    udtDataLogger:=Data,
    udtDl_If:=Data_captu);
xReady_Datalogger_FTP:=DataLogger_V0_18_2.xActive;
xError_Datalogger_FTP:=DataLogger_V0_18_2.xError;
wDiagCode_Datalogger_FTP:=DataLogger_V0_18_2.wAddDiagCode;
Data:=DataLogger_V0_18_2.udtDataLogger;
Data_captu:=DataLogger_V0_18_2.udtDl_If;

(*Envío de datos a servidor FTP*)
DataLogFTP_V0_18_1(xActivate:=xReady_Datalogger_FTP,
    iCreateNewFileAt_n_oClock:=icreatenewfile,
    strFileName:=str_FileName,
    iSaveAfter_n_Records:=20,
    iCreateNewFileAfter_n_Days:=10,
    strFTP_Server_IP:=str_IPserver,
    strIP_PLC:='192.168.1.111',
    strFTP_User:=str_User_ftp,
    strFTP_Password:=str_password_ftp,
    bConf:=byte#16#07,
    iPort:=iPort_FTP,
    xCreateNewFile:=xnewFile,(* BOOL *)
    udtDl_If:=Data_captu,
    strActFile:=strActFile_ftp,
    strLastFile:=strLastFile_ftp);

xReady_FTP:=DataLogFTP_V0_18_1.xActive;
iusedmemory_ftp:=DataLogFTP_V0_18_1.iUsedMemory;
xnewFile_CSV:=DataLogFTP_V0_18_1.xNewFileCreated;
strLastResponse:=DataLogFTP_V0_18_1.strLastResponse;
xError_ftp:=DataLogFTP_V0_18_1.xError;
Data_captu:=DataLogFTP_V0_18_1.udtDl_If;
strActFile_ftp:=DataLogFTP_V0_18_1.strActFile;
strLastFile_ftp:=DataLogFTP_V0_18_1.strLastFile;

(*DATALOGGER PARA ALMACENAMIENTO DE DATOS CADA 5 MINUTOS EN PLC*)
DataLogger_V0_18_3(
    xActivate:=xActivar_Datalogger,
    xReq:=xReq_Datalogger_PLC,
    xAddTimeToRow:=xAddTime,
    udtDataLogger:=Data,
    udtDl_If:=Data_captu_PLC);
```

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<p>Current POU: FTP_Settings</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

```

xReady_Datalogger_PLC:=DataLogger_V0_18_3.xActive;
xError_Datalogger_PLC:=DataLogger_V0_18_3.xError;
wDiagCode_Datalogger_PLC:=DataLogger_V0_18_3.wAddDiagCode;
Data:=DataLogger_V0_18_3.udtDataLogger;
Data_captu_PLC:=DataLogger_V0_18_3.udtDl_If;

DataLogCSV_V0_18_1(
  xActivate:=xReady_Datalogger_PLC,
  iCreateNewFileAt_n_oClock:=0,
  strFileName:=str_FileName,
  iSaveAfter_n_Records:=50,
  iCreateNewFileAfter_n_Days:=10,
(* bConf:=(* BYTE *)
  xCreateNewFile:=xNewFileCreate_PLC,(* BOOL *)
  iMaxFiles:=5,
  strActFile:=strActFile_csv,
  strLastFile:=strLastFile_csv,
  udtDl_If:=Data_captu_PLC);
xReady_CSV:=DataLogCSV_V0_18_1.xActive;
(* INT *)iUsedMem_PLC:=DataLogCSV_V0_18_1.iUsedMemory;
(* BOOL *)xnewFile_CSV_PLC:=DataLogCSV_V0_18_1.xNewFileCreated;
xError_CSV:=DataLogCSV_V0_18_1.xError;
strActFile_csv:=DataLogCSV_V0_18_1.strActFile;
strLastFile_csv:=DataLogCSV_V0_18_1.strLastFile;
Data_captu_PLC:=DataLogCSV_V0_18_1.udtDl_If;

```

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<p>Current POU: FTP_Settings</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

POU: Settings_Modbus, hoja de trabajo: Settings_Modbus

(*Modbus TCP*)

IP_TCP:=Cf_IP_TCP;

(*Modbus RTU*)

diBaudrate_RTU:=Cf_diBaudrate;

Slave_Addr_ValOnline_RTU:=Cf_uiSlave_Addr_RTU;

Slave_Addr_ValAdvan_RTU:=Cf_uiSlave_Addr_RTU;

IF xGuardar_Config THEN

 xMsj_Guardado:=true;

TOF_3(IN:=xMsj_Guardado,PT:=time#5s);

IF TOF_3.Q THEN

 xMsj_Guardado:=false;

 xGuardar_Config:=false;

end_if;

end_if;

(*IF xGuardar_Config THEN

 xMsj_Guardado:=true;

TON_2(IN:=xMsj_Guardado,PT:=time#5s);

 IF TON_2.Q THEN

 xMsj_Guardado:=false;

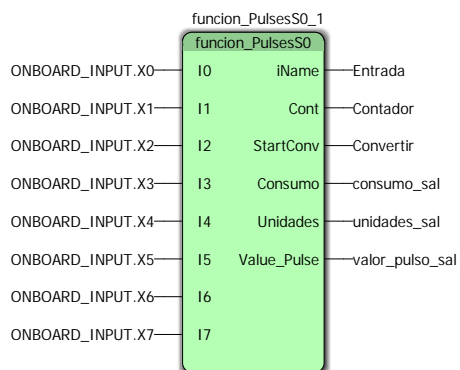
 xGuardar_Config:=false;

 end_if;

end_if;*)

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Current POU: Settings_Modbus	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:24

POU: PulsesS0_main, hoja de trabajo: PulsesS0_main



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<p>Current POU: PulsesS0_main</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

POU: funcion_PulsesS0, hoja de trabajo: funcion_PulsesS0

(*Cada vez que se recibe un pulso en alguna de las entradas, se incrementa el contador correspondiente a esa entrada, y se almacena el numero de la entrada activada. Si alguna de las entradas esta activa se activa la variable StartConv, si todas las entradas desactivadas se StartConv:=false. StartConv variable que si se encuentra activa se envian/al los datos en el datalogger. StartConv=false no se esta enviando ningun dato aunque la comuni con el datalogger este abierta*)

```
R_TRIG_0(CLK:=(I0));
R_TRIG_1(CLK:=(I1));
R_TRIG_2(CLK:=(I2));
R_TRIG_3(CLK:=(I3));
R_TRIG_4(CLK:=(I4));
R_TRIG_5(CLK:=(I5));
R_TRIG_6(CLK:=(I6));
R_TRIG_7(CLK:=(I7));
```

```
if Actualizar THEN
  CASE NDevice OF
    0: Name0:=NameDevice;
      value_of_pulse0:=ValuePulseDevice;
      unit0:=UnitDevice;

    1: Name1:=NameDevice;
      value_of_pulse1:=ValuePulseDevice;
      unit1:=UnitDevice;

    2: Name2:=NameDevice;
      value_of_pulse2:=ValuePulseDevice;
      unit2:=UnitDevice;

    3: Name3:=NameDevice;
      value_of_pulse3:=ValuePulseDevice;
      unit3:=UnitDevice;

    4: Name4:=NameDevice;
      value_of_pulse4:=ValuePulseDevice;
      unit4:=UnitDevice;

    5: Name5:=NameDevice;
      value_of_pulse5:=ValuePulseDevice;
      unit5:=UnitDevice;

    6: Name6:=NameDevice;
      value_of_pulse6:=ValuePulseDevice;
      unit6:=UnitDevice;

    7: Name7:=NameDevice;
      value_of_pulse7:=ValuePulseDevice;
      unit7:=UnitDevice;

  end_case;
END_IF;
```

```
IF R_TRIG_0.Q THEN
  iName:=Name0;
  iCont0:=iCont0+1;
  Cont:=iCont0;
  Consumo_0:=iCont0*value_of_pulse0;
  Consumo:=Consumo_0;
  Unidades:=unit0;
  Value_Pulse:=value_of_pulse0;
END_IF;
```

```
IF R_TRIG_1.Q THEN
  iName:=Name1;
  iCont1:=iCont1+1;
  Cont:=iCont1;
  Consumo_1:=iCont1*value_of_pulse1;
```

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<p>Current POU: funcion_PulsesS0</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

```

Consumo:=Consumo_1;
Unidades:=unit1;
Value_Pulse:=value_of_pulse1;
END_IF;

IF R_TRIG_2.Q THEN
iName:=Name2;
iCont2:=iCont2+1;
Cont:=iCont2;
Consumo_2:=iCont2*value_of_pulse2;
Consumo:=Consumo_2;
Unidades:=unit2;
Value_Pulse:=value_of_pulse2;
END_IF;

IF R_TRIG_3.Q THEN
iName:=Name3;
iCont3:=iCont3+1;
Cont:=iCont3;
Consumo_3:=iCont3*value_of_pulse3;
Consumo:=Consumo_3;
Unidades:=unit3;
Value_Pulse:=value_of_pulse3;
END_IF;

IF R_TRIG_4.Q THEN
iName:=Name4;
iCont4:=iCont4+1;
Cont:=iCont4;
Consumo_4:=iCont4*value_of_pulse4;
Consumo:=Consumo_4;
Unidades:=unit4;
Value_Pulse:=value_of_pulse4;
END_IF;

IF R_TRIG_5.Q THEN
iName:=Name5;
iCont5:=iCont5+1;
Cont:=iCont5;
Consumo_5:=iCont5*value_of_pulse5;
Consumo:=Consumo_5;
Unidades:=unit5;
Value_Pulse:=value_of_pulse5;
END_IF;

IF R_TRIG_6.Q THEN
iName:=Name6;
iCont6:=iCont6+1;
Cont:=iCont6;
Consumo_6:=iCont6*value_of_pulse6;
Consumo:=Consumo_6;
Unidades:=unit6;
Value_Pulse:=value_of_pulse6;
END_IF;

IF R_TRIG_7.Q THEN
iName:=Name7;
iCont7:=iCont7+1;
Cont:=iCont7;
Consumo_7:=iCont7*value_of_pulse7;
Consumo:=Consumo_7;
Unidades:=unit7;
Value_Pulse:=value_of_pulse7;
END_IF;

```

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<p>Current POU: funcion_PulsesS0</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

```

IF ( I0 OR I1 OR I3 OR I4 OR I5 OR I6 OR I7) THEN
  StartConv:=TRUE;
ELSE IF (I0 AND I1 AND I2 AND I3 AND I4 AND I5 AND I6 AND I7)=FALSE THEN
  StartConv:=FALSE;
END_IF;
END_IF;

(*IF ( R_TRIG_0.Q OR R_TRIG_1.Q OR R_TRIG_2.Q OR R_TRIG_3.Q OR R_TRIG_4.Q OR R_TRIG_5.Q OR
  StartConv:=TRUE;
  ELSE IF (R_TRIG_0.Q AND R_TRIG_1.Q AND R_TRIG_2.Q AND R_TRIG_3.Q AND R_TRIG_4.Q AND R_T
  StartConv:=FALSE;
  END_IF;
END_IF;*)

```

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<p>Current POU: funcion_PulsesS0</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:24</p>

POU: Values_RTU, hoja de trabajo: Values_RTU

```

U12_rtu:=word_to_real(Received_Data_RTU[2])/100.0;
U23_rtu:=word_to_real(Received_Data_RTU[4])/100.0;
U31_rtu:=word_to_real(Received_Data_RTU[6])/100.0;

V1_rtu:=word_to_real(Received_Data_RTU[8])/100.0;
V2_rtu:=word_to_real(Received_Data_RTU[10])/100.0;
V3_rtu:=word_to_real(Received_Data_RTU[12])/100.0;

frec_rtu:=word_to_real(Received_Data_RTU[14])/100.0;

I1_rtu:=word_to_real(Received_Data_RTU[16])/1000.0;
I2_rtu:=word_to_real(Received_Data_RTU[18])/1000.0;
I3_rtu:=word_to_real(Received_Data_RTU[20])/1000.0;
In_rtu:=word_to_real(Received_Data_RTU[22])/1000.0;

Pt_rtu:=word_to_real(Received_Data_RTU[24])/100.0;
Qt_rtu:=word_to_real(Received_Data_RTU[26])/100.0;
St_online_rtu:=word_to_real(Received_Data_RTU[28])/100.0;
fdp_rtu:=word_to_real(Received_Data_RTU[30])/1000.0;

P1_rtu:=word_to_real(Received_Data_RTU[32])/100.0;
P2_rtu:=word_to_real(Received_Data_RTU[34])/100.0;
P3_rtu:=word_to_real(Received_Data_RTU[36])/100.0;

Q1_rtu:=word_to_real(Received_Data_RTU[38])/100.0;
Q2_rtu:=word_to_real(Received_Data_RTU[40])/100.0;
Q3_rtu:=word_to_real(Received_Data_RTU[42])/100.0;

S1_rtu:=word_to_real(Received_Data_RTU[44])/100.0;
S2_rtu:=word_to_real(Received_Data_RTU[46])/100.0;
S3_rtu:=word_to_real(Received_Data_RTU[48])/100.0;

fdp1_rtu:=word_to_real(Received_Data_RTU[50])/1000.0;
fdp2_rtu:=word_to_real(Received_Data_RTU[52])/1000.0;
fdp3_rtu:=word_to_real(Received_Data_RTU[54])/1000.0;

```

(*Val.Medios*)

```
R_TRIG_Advan_RTU(CLK:=(RTC_MINUTES mod 15)=0);
```

```
IF R_TRIG_Advan_RTU.Q OR xRead_ValAdvan_RTU THEN
```

```

xRead_ValOnline_RTU:=false;
xSendRequest_ValOnline_RTU:=false;

```

```

U12_med_rtu:=word_to_real(Received_ValAdvan_RTU[2])/100.0;
U23_med_rtu:=word_to_real(Received_ValAdvan_RTU[4])/100.0;
U31_med_rtu:=word_to_real(Received_ValAdvan_RTU[6])/100.0;

```

```

V1_med_rtu:=word_to_real(Received_ValAdvan_RTU[8])/100.0;
V2_med_rtu:=word_to_real(Received_ValAdvan_RTU[10])/100.0;
V3_med_rtu:=word_to_real(Received_ValAdvan_RTU[12])/100.0;

```

```
frec_med_rtu:=word_to_real(Received_ValAdvan_RTU[14])/100.0;
```

```

I1_med_rtu:=word_to_real(Received_ValAdvan_RTU[16])/1000.0;
I2_med_rtu:=word_to_real(Received_ValAdvan_RTU[18])/1000.0;
I3_med_rtu:=word_to_real(Received_ValAdvan_RTU[20])/1000.0;
In_med_rtu:=word_to_real(Received_ValAdvan_RTU[22])/1000.0;

```

```

Pt_med_rtu:=word_to_real(Received_ValAdvan_RTU[24])/100.0;
Qt_med_rtu:=word_to_real(Received_ValAdvan_RTU[28])/100.0;
St_online_med_rtu:=word_to_real(Received_ValAdvan_RTU[32])/100.0;

```

(*Val.Máximos*)

```

V1_max_rtu:=word_to_real(Received_ValAdvan_RTU[40])/100.0;
V2_max_rtu:=word_to_real(Received_ValAdvan_RTU[42])/100.0;

```

<p>PC WORX</p>	<p>Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p>Sheet number 40</p>
<p>Current POU: Values_RTU</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:25</p>

```

V3_max_rtu:=word_to_real(Received_ValAdvan_RTU[44])/100.0;

frec_max_rtu:=word_to_real(Received_ValAdvan_RTU[46])/100.0;

I1_max_rtu:=word_to_real(Received_ValAdvan_RTU[48])/1000.0;
I2_max_rtu:=word_to_real(Received_ValAdvan_RTU[50])/1000.0;
I3_max_rtu:=word_to_real(Received_ValAdvan_RTU[52])/1000.0;
In_max_rtu:=word_to_real(Received_ValAdvan_RTU[54])/1000.0;

Pt_max_rtu:=word_to_real(Received_ValAdvan_RTU[56])/100.0;
Qt_max_rtu:=word_to_real(Received_ValAdvan_RTU[60])/100.0;
St_online_max_rtu:=word_to_real(Received_ValAdvan_RTU[62])/100.0;
END_IF;

IF xDone_ValAdvan_RTU THEN
  xRead_ValAdvan_RTU:=false;
  xRead_ValOnline_RTU:=true;
end_if;

if xAtras_RTU then
  xActivate_Master_RTU:=false;
end_if;

(*if xReady_Master_RTU AND xRead_ValAdvan_RTU=false then

  xRead_ValOnline_RTU:=true;
  xSendRequest_ValOnline_RTU:=true;
end_if;*)

arrValores_RTU[1]:=U12_rtu;
arrValores_RTU[2]:=U23_rtu;
arrValores_RTU[3]:=U31_rtu;
arrValores_RTU[4]:=V1_rtu;
arrValores_RTU[5]:=V2_rtu;
arrValores_RTU[6]:=V3_rtu;
arrValores_RTU[7]:=I1_rtu;
arrValores_RTU[8]:=I2_rtu;
arrValores_RTU[9]:=I3_rtu;
arrValores_RTU[10]:=In_rtu;
arrValores_RTU[11]:=frec_rtu;
arrValores_RTU[12]:=Pt_rtu;
arrValores_RTU[13]:=Qt_rtu;
arrValores_RTU[14]:=St_online_rtu;
arrValores_RTU[15]:=fdp_rtu;
arrValores_RTU[16]:=P1_rtu;
arrValores_RTU[17]:=Q1_rtu;
arrValores_RTU[18]:=S1_rtu;
arrValores_RTU[19]:=fdp1_rtu;
arrValores_RTU[20]:=P2_rtu;
arrValores_RTU[21]:=Q2_rtu;
arrValores_RTU[22]:=S2_rtu;
arrValores_RTU[23]:=fdp2_rtu;
arrValores_RTU[24]:=P3_rtu;
arrValores_RTU[25]:=Q3_rtu;
arrValores_RTU[26]:=S3_rtu;
arrValores_RTU[27]:=fdp3_rtu;

arrValores_RTU[28]:=U12_med_rtu;
arrValores_RTU[29]:=U23_med_rtu;
arrValores_RTU[30]:=U31_med_rtu;
arrValores_RTU[31]:=V1_med_rtu;
arrValores_RTU[32]:=V2_med_rtu;
arrValores_RTU[33]:=V3_med_rtu;
arrValores_RTU[34]:=Pt_med_rtu;
arrValores_RTU[35]:=Qt_med_rtu;
arrValores_RTU[36]:=St_online_med_rtu;
arrValores_RTU[37]:=I1_med_rtu;
arrValores_RTU[38]:=I2_med_rtu;
arrValores_RTU[39]:=I3_med_rtu;
arrValores_RTU[40]:=In_med_rtu;
arrValores_RTU[41]:=frec_med_rtu;
arrValores_RTU[42]:=V1_max_rtu;

```

<p>PC WORX</p>	<p>Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p>Sheet number 41</p>
<p>Current POU: Values_RTU</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:25</p>

```
arrValores_RTU[43]:=V2_max_rtu;  
arrValores_RTU[44]:=V3_max_rtu;  
arrValores_RTU[45]:=Pt_max_rtu;  
arrValores_RTU[46]:=Qt_max_rtu;  
arrValores_RTU[47]:=St_online_max_rtu;  
arrValores_RTU[48]:=I1_max_rtu;  
arrValores_RTU[49]:=I2_max_rtu;  
arrValores_RTU[50]:=I3_max_rtu;  
arrValores_RTU[51]:=In_max_rtu;  
arrValores_RTU[52]:=frec_max_rtu;
```

PC WORX	Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany	Sheet number 42
Current POU: Values_RTU	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:25

POU: Values_Online_Advan, hoja de trabajo: Values_Online_Advan

(*PARAM LINEA*)

```

U12_tcp:=word_to_real(Values_Online[2])/100.0;
U23_tcp:=word_to_real(Values_Online[4])/100.0;
U31_tcp:=word_to_real(Values_Online[6])/100.0;

V1_tcp:=word_to_real(Values_Online[8])/100.0;
V2_tcp:=word_to_real(Values_Online[10])/100.0;
V3_tcp:=word_to_real(Values_Online[12])/100.0;

frec_tcp:=word_to_real(Values_Online[14])/100.0;

I1_tcp:=word_to_real(Values_Online[16])/1000.0;
I2_tcp:=word_to_real(Values_Online[18])/1000.0;
I3_tcp:=word_to_real(Values_Online[20])/1000.0;
In_tcp:=word_to_real(Values_Online[22])/1000.0;

Pt_tcp:=word_to_real(Values_Online[24])/100.0;
Qt_tcp:=word_to_real(Values_Online[26])/100.0;
St_online_tcp:=word_to_real(Values_Online[28])/100.0;
fdp_tcp:=word_to_real(Values_Online[30])/1000.0;

P1_tcp:=word_to_real(Values_Online[32])/100.0;
P2_tcp:=word_to_real(Values_Online[34])/100.0;
P3_tcp:=word_to_real(Values_Online[36])/100.0;

Q1_tcp:=word_to_real(Values_Online[38])/100.0;
Q2_tcp:=word_to_real(Values_Online[40])/100.0;
Q3_tcp:=word_to_real(Values_Online[42])/100.0;

S1_tcp:=word_to_real(Values_Online[44])/100.0;
S2_tcp:=word_to_real(Values_Online[46])/100.0;
S3_tcp:=word_to_real(Values_Online[48])/100.0;

fdp1_tcp:=word_to_real(Values_Online[50])/1000.0;
fdp2_tcp:=word_to_real(Values_Online[52])/1000.0;
fdp3_tcp:=word_to_real(Values_Online[54])/1000.0;

```

(*Val.Medios*)

```

R_TRIG_Advan(CLK:=(RTC_MINUTES mod 15)=0);

IF R_TRIG_Advan.Q OR xRead_ValAdvan THEN

  xRead_ValAdvan:=TRUE;
  U12_med_tcp:=word_to_real(Values_Advan[2])/100.0;
  U23_med_tcp:=word_to_real(Values_Advan[4])/100.0;
  U31_med_tcp:=word_to_real(Values_Advan[6])/100.0;

  V1_med_tcp:=word_to_real(Values_Advan[8])/100.0;
  V2_med_tcp:=word_to_real(Values_Advan[10])/100.0;
  V3_med_tcp:=word_to_real(Values_Advan[12])/100.0;

  frec_med_tcp:=word_to_real(Values_Advan[14])/100.0;

  I1_med_tcp:=word_to_real(Values_Advan[16])/1000.0;
  I2_med_tcp:=word_to_real(Values_Advan[18])/1000.0;
  I3_med_tcp:=word_to_real(Values_Advan[20])/1000.0;
  In_med_tcp:=word_to_real(Values_Advan[22])/1000.0;

  Pt_med_tcp:=word_to_real(Values_Advan[24])/100.0;
  Qt_med_tcp:=word_to_real(Values_Advan[28])/100.0;
  St_online_med_tcp:=word_to_real(Values_Advan[32])/100.0;

```

<p>PC WORX</p>	<p>Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p>Sheet number 43</p>
<p>Current POU: Values_Online_Advan</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:25</p>

```

(*Val.Máximos*)
V1_max_tcp:=word_to_real(Values_Advan[40])/100.0;
V2_max_tcp:=word_to_real(Values_Advan[42])/100.0;
V3_max_tcp:=word_to_real(Values_Advan[44])/100.0;

frec_max_tcp:=word_to_real(Values_Advan[46])/100.0;

I1_max_tcp:=word_to_real(Values_Advan[48])/1000.0;
I2_max_tcp:=word_to_real(Values_Advan[50])/1000.0;
I3_max_tcp:=word_to_real(Values_Advan[52])/1000.0;
In_max_tcp:=word_to_real(Values_Advan[54])/1000.0;

Pt_max_tcp:=word_to_real(Values_Advan[56])/100.0;
Qt_max_tcp:=word_to_real(Values_Advan[60])/100.0;
St_online_max_tcp:=word_to_real(Values_Advan[64])/100.0;
END_IF;

```

```

IF NDR_ValAdvan THEN
xRead_ValAdvan:=false;
end_if;

```

```

arrValores_TCP[1]:=U12_tcp;
arrValores_TCP[2]:=U23_tcp;
arrValores_TCP[3]:=U31_tcp;
arrValores_TCP[4]:=V1_tcp;
arrValores_TCP[5]:=V2_tcp;
arrValores_TCP[6]:=V3_tcp;
arrValores_TCP[7]:=I1_tcp;
arrValores_TCP[8]:=I2_tcp;
arrValores_TCP[9]:=I3_tcp;
arrValores_TCP[10]:=In_tcp;
arrValores_TCP[11]:=frec_tcp;
arrValores_TCP[12]:=Pt_tcp;
arrValores_TCP[13]:=Qt_tcp;
arrValores_TCP[14]:=St_online_tcp;
arrValores_TCP[15]:=fdp_tcp;
arrValores_TCP[16]:=P1_tcp;
arrValores_TCP[17]:=Q1_tcp;
arrValores_TCP[18]:=S1_tcp;
arrValores_TCP[19]:=fdp1_tcp;
arrValores_TCP[20]:=P2_tcp;
arrValores_TCP[21]:=Q2_tcp;
arrValores_TCP[22]:=S2_tcp;
arrValores_TCP[23]:=fdp2_tcp;
arrValores_TCP[24]:=P3_tcp;
arrValores_TCP[25]:=Q3_tcp;
arrValores_TCP[26]:=S3_tcp;
arrValores_TCP[27]:=fdp3_tcp;

```

```

arrValores_TCP[28]:=U12_med_tcp;
arrValores_TCP[29]:=U23_med_tcp;
arrValores_TCP[30]:=U31_med_tcp;
arrValores_TCP[31]:=V1_med_tcp;
arrValores_TCP[32]:=V2_med_tcp;
arrValores_TCP[33]:=V3_med_tcp;
arrValores_TCP[34]:=Pt_med_tcp;
arrValores_TCP[35]:=Qt_med_tcp;
arrValores_TCP[36]:=St_online_med_tcp;
arrValores_TCP[37]:=I1_med_tcp;
arrValores_TCP[38]:=I2_med_tcp;
arrValores_TCP[39]:=I3_med_tcp;
arrValores_TCP[40]:=In_med_tcp;
arrValores_TCP[41]:=frec_med_tcp;
arrValores_TCP[42]:=V1_max_tcp;
arrValores_TCP[43]:=V2_max_tcp;
arrValores_TCP[44]:=V3_max_tcp;
arrValores_TCP[45]:=Pt_max_tcp;
arrValores_TCP[46]:=Qt_max_tcp;
arrValores_TCP[47]:=St_online_max_tcp;
arrValores_TCP[48]:=I1_max_tcp;
arrValores_TCP[49]:=I2_max_tcp;

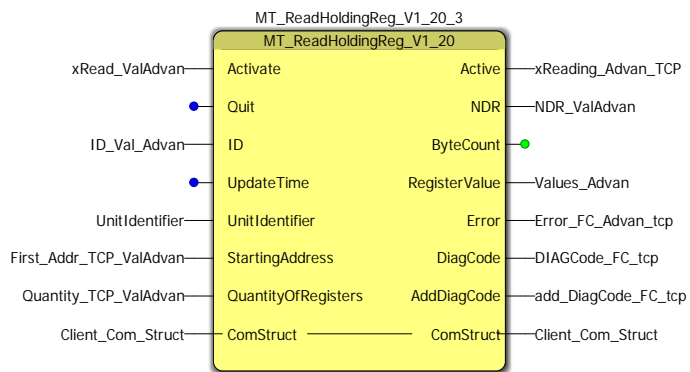
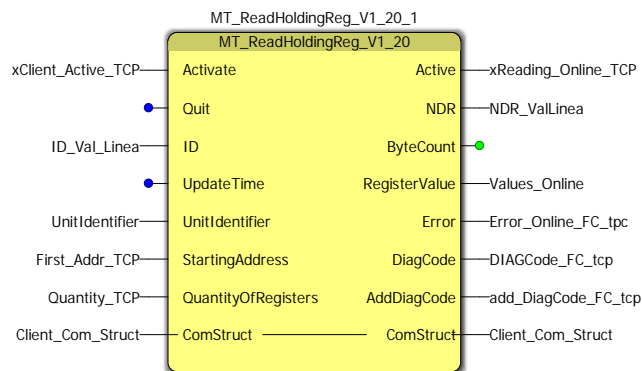
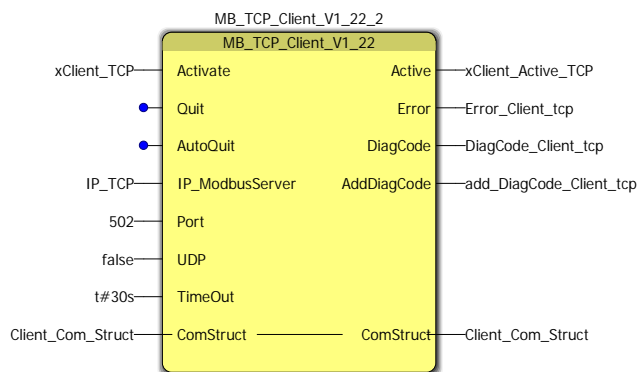
```

<p align="center">PC WORX</p>	<p align="center">Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p align="center">Sheet number 44</p>
<p>Current POU: Values_Online_Advan</p>	<p align="center">TFM_v01_back</p>	<p align="center">This copy printed out at: 19/02/2015 16:15:25</p>

```
arrValores_TCP[50]:=I3_max_tcp;  
arrValores_TCP[51]:=In_max_tcp;  
arrValores_TCP[52]:=frec_max_tcp;
```

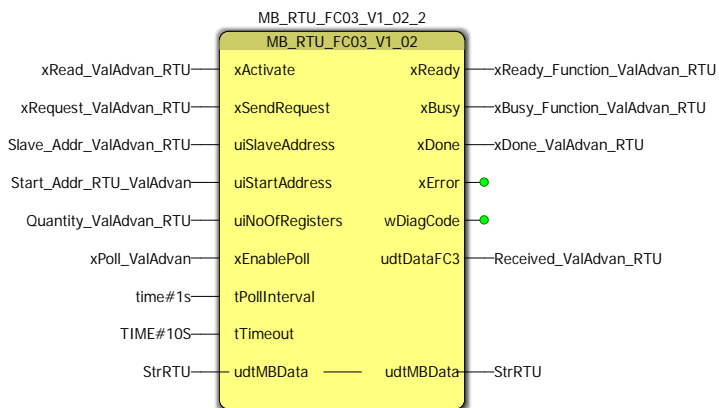
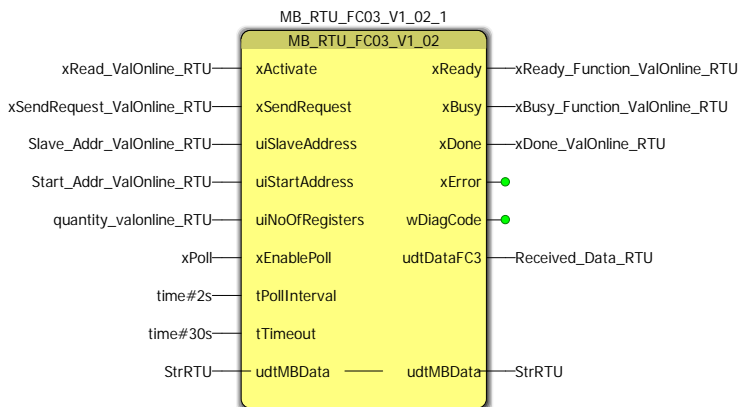
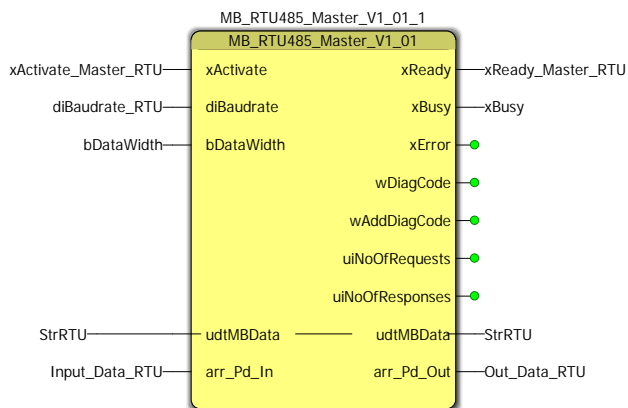
PC WORX	Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany	Sheet number 45
Current POU: Values_Online_Advan	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:25

POU: Modbus_TCP, hoja de trabajo: Modbus_TCP



<p>PC WORX</p>	<p>Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p>Sheet number 46</p>
<p>Current POU: Modbus_TCP</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:25</p>

POU: Modbus_RTU, hoja de trabajo: Modbus_RTU



PC WORX

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Flachsmarktstraße 8
32825 Blomberg
Germany

Sheet number
47

Current POU:
Modbus_RTU

TFM_v01_back

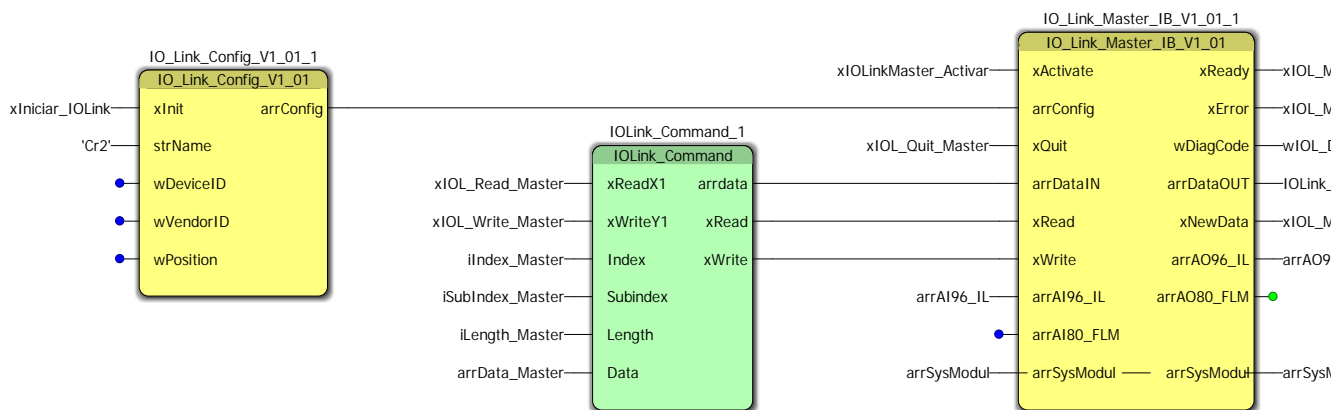
This copy printed out at:
19/02/2015 16:15:25

POU: IOLink_Command, hoja de trabajo: IOLink_Command

```
(***** Read *****)  
  
if xReadX1 then  
  arrdata.wIndex      := INT_TO_WORD(Index);  
  arrdata.wSubindex   := INT_TO_WORD(Subindex);  
  arrdata.xread       := true;  
  arrdata.xWrite      := false;  
end_if;  
  
  R_TRIG_1(CLK := xReadX1);  
  xRead := R_TRIG_1.Q;  
  
(***** Write *****)  
  
if xWriteY1 then  
  arrdata.wIndex      := INT_TO_WORD(Index);  
  arrdata.wSubindex   := INT_TO_WORD(Subindex);  
  arrdata.xWrite      := true;  
  arrdata.xread       := false;  
  arrdata.iLength     := Length;           (*Length in Byte*)  
  arrdata.arrData     := Data;  
end_if;  
  
  R_TRIG_2(CLK := xWriteY1);  
  xWrite := R_TRIG_2.Q;
```

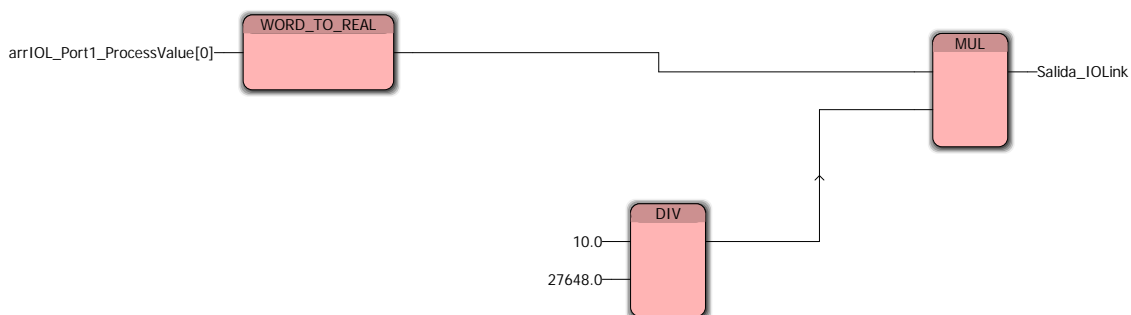
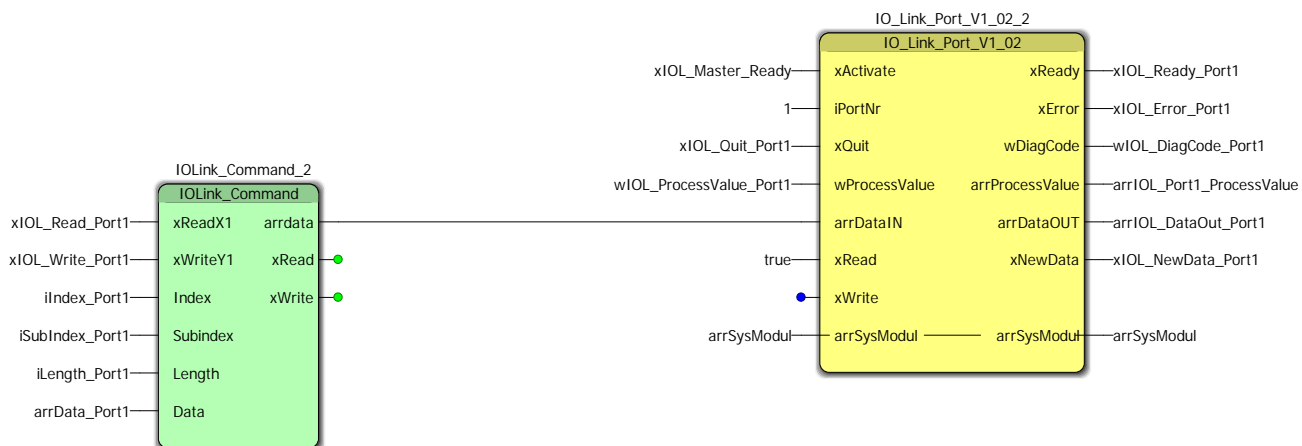
PC WORX	Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany	Sheet number 48
Current POU: IOLink_Command	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:25

POU: ME_IOLink, hoja de trabajo: ME_IOLink



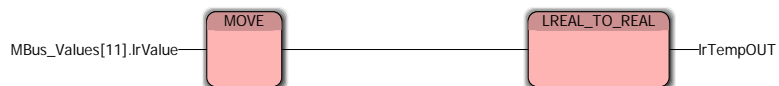
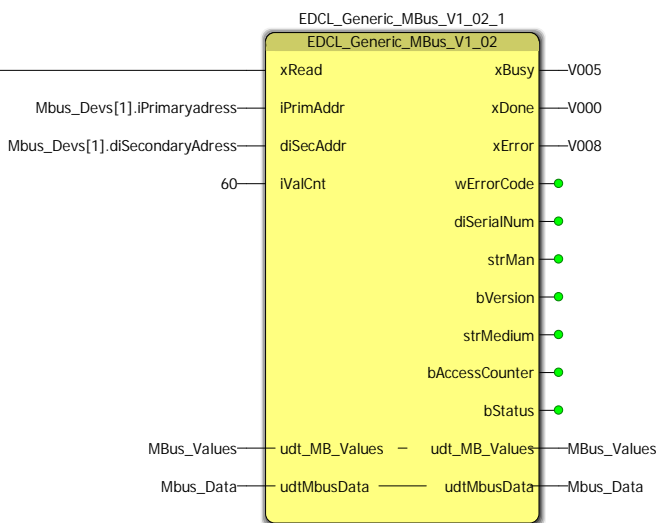
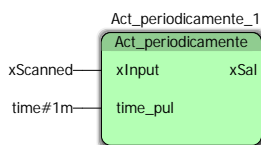
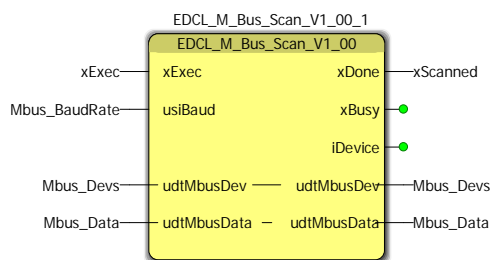
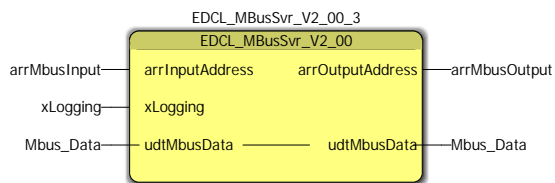
Master_Ready
 Master_Error
 _DiagCode_Master
 _OutputData_Master
 Master_NewData
 %6_IL

Modul



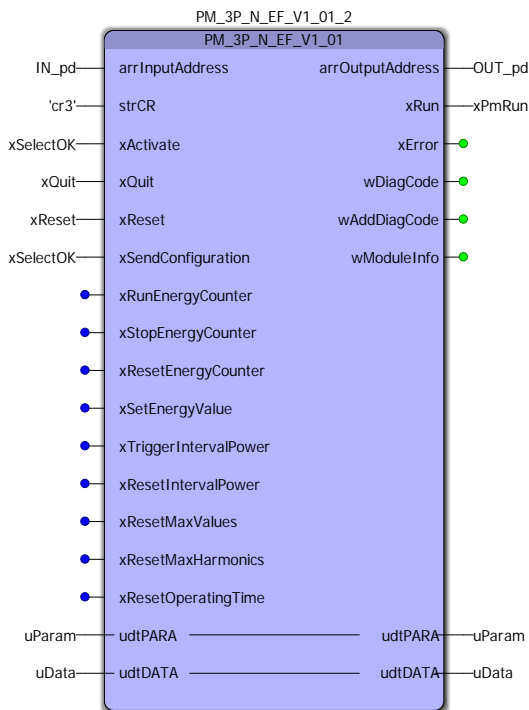
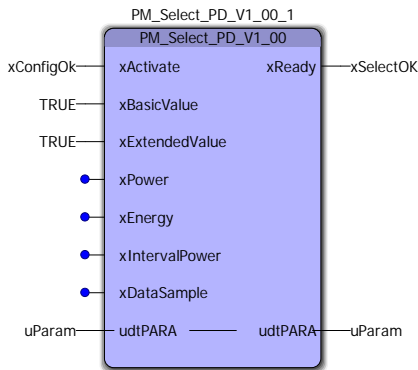
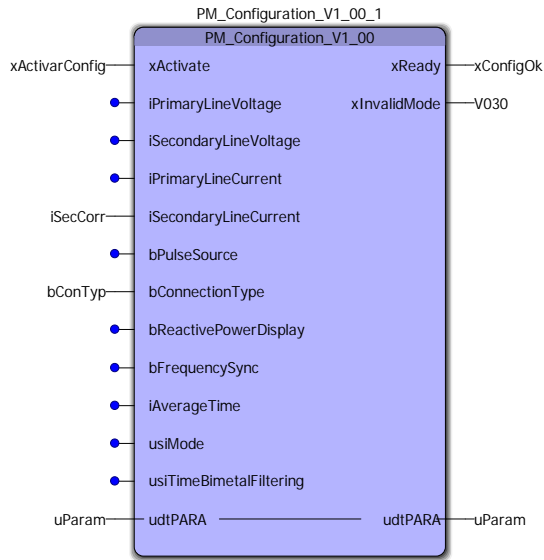
<p>PC WORX</p>	<p>Phoenix Contact GmbH & Co. KG Flachsmarktstraße 8 32825 Blomberg Germany</p>	<p>Sheet number 49</p>
<p>Current POU: ME_IOLink</p>	<p>TFM_v01_back</p>	<p>This copy printed at: 19/02/2015 16:15:25</p>

POU: ME_MBus, hoja de trabajo: ME_MBus

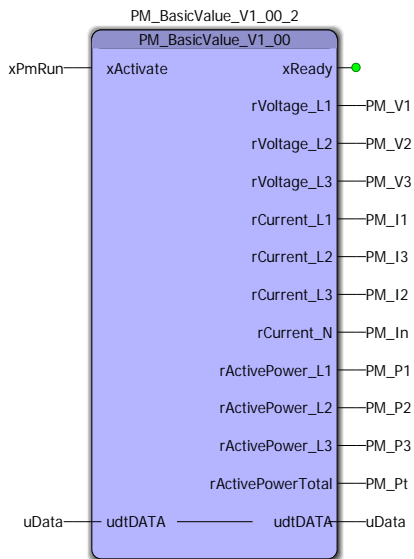
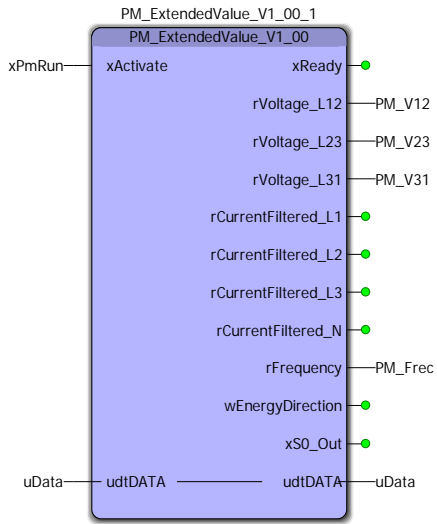


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<p>Current POU: ME_MBus</p>	<p>TFM_v01_back</p>	<p>This copy printed at: 19/02/2015 16:15:26</p>

POU: ME_PM, hoja de trabajo: ME_PM



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<p>Current POU: ME_PM</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:26</p>



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Sheet number
 52

Current POU:
 ME_PM

TFM_v01_back

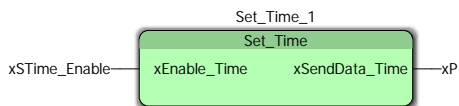
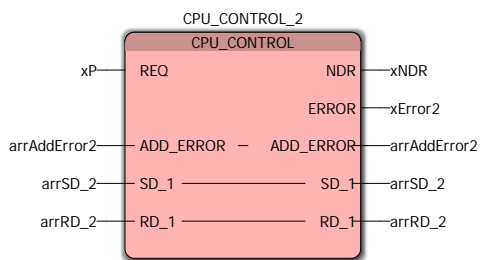
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 19/02/2015 16:15:26

POU: ME_AnalogTemp, hoja de trabajo: ME_AnalogTemp

```
Temperatura01:=WORD_TO_REAL(Input01)*0.1;  
Temperatura02:=WORD_TO_REAL(Input02)*0.1;
```

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Current POU: ME_AnalogTemp	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:26

POU: Cambiar_Hora, hoja de trabajo: Cambiar_Hora



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<p>Current POU: Cambiar_Hora</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:26</p>

POU: Set_Time, hoja de trabajo: Set_Time

```
IF xSendData_Time THEN
    xSendData_Time:=FALSE;
END_IF;

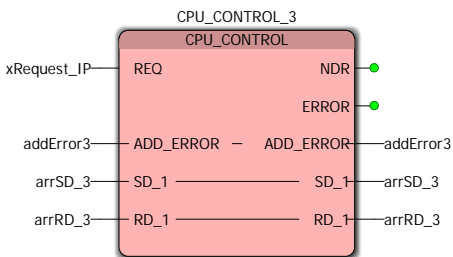
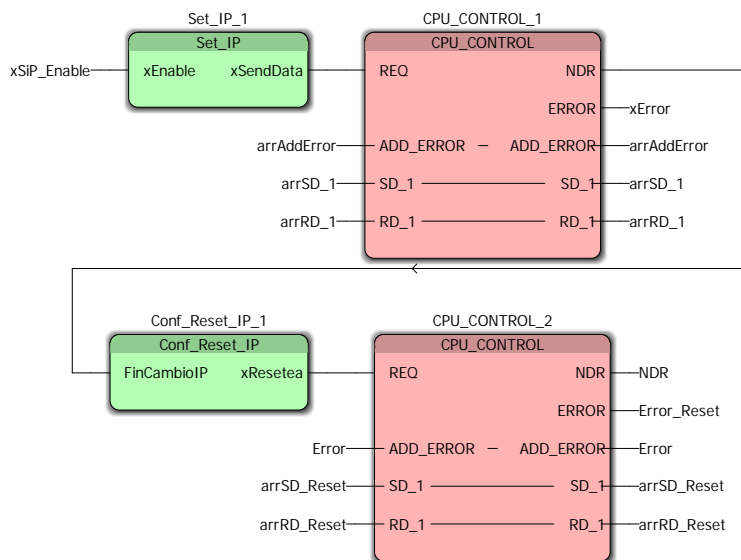
R_TRIG_2(CLK:=(xEnable_Time));

IF xEnable_Time THEN
    arrSD_2[0] := WORD#16#0296;
    arrSD_2[1] := WORD#16#6;
    arrSD_2[2]:=wSecond;
    arrSD_2[3]:=wMinute;
    arrSD_2[4]:=wHour;
    arrSD_2[5]:=wDay;
    arrSD_2[6]:=wMonth;
    arrSD_2[7]:=wYear;
    xSendData_Time:=TRUE;

END_IF;
```

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Current POU: Set_Time	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:26

POU: Cambiar_IP, hoja de trabajo: Cambiar_IP



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<p>Current POU: Cambiar_IP</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:26</p>

POU: Set_IP, hoja de trabajo: Set_IP

```
IF xSendData = TRUE THEN
  xSendData := FALSE;
END_IF;

R_TRIG_1(CLK:=(xEnable));

IF xEnable THEN

  arrSD_1[0] := WORD#16#029B;
  arrSD_1[1] := WORD#16#8;

  arrSD_1[2].B1 := IP1;
  arrSD_1[2].B0 := IP2;
  arrSD_1[3].B1 := IP3;
  arrSD_1[3].B0 := IP4;
  arrSD_1[4].B1 := MASK1;
  arrSD_1[4].B0 := MASK2;
  arrSD_1[5].B1 := MASK3;
  arrSD_1[5].B0 := MASK4;
  arrSD_1[6].B1 := GATEWAY1;
  arrSD_1[6].B0 := GATEWAY2;
  arrSD_1[7].B1 := GATEWAY3;
  arrSD_1[7].B0 := GATEWAY4;
  arrSD_1[8].B1 := byte#0;
  arrSD_1[8].B0 := byte#0;
  arrSD_1[9].B1 := byte#0;
  arrSD_1[9].B0 := byte#0;

  xSendData := TRUE;

  (* arrSD_Reset[0] := WORD#16#0ABA;*)

END_IF;
```

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Current POU: Set_IP	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:26

POU: Conf_Reset_IP, hoja de trabajo: Conf_Reset_IP

```
IF FinCambioIP THEN  
  
    arrSD_Reset[0] := WORD#16#0ABA;  
    arrSD_Reset[1] := WORD#16#0000;  
  
    xResetea := TRUE;  
  
END_IF;
```

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Current POU: Conf_Reset_IP	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:26

POU: Get_IP, hoja de trabajo: Get_IP

IF xStart THEN

arrSD_3[0] := WORD#16#029C;

xRequest_IP:=TRUE;

END_IF;

IF xRequest_IP THEN

IP1_actual:=arrRD_3[3].B1;

IP2_actual:=arrRD_3[3].B0;

IP3_actual:=arrRD_3[4].B1;

IP4_actual:=arrRD_3[4].B0;

MASK1_actual:=arrRD_3[5].B1;

MASK2_actual:=arrRD_3[5].B0;

MASK3_actual:=arrRD_3[6].B1;

MASK4_actual:=arrRD_3[6].B0;

GWAY1_actual:=arrRD_3[7].B1;

GWAY2_actual:=arrRD_3[7].B0;

GWAY3_actual:=arrRD_3[8].B1;

GWAY4_actual:=arrRD_3[8].B0;

END_IF;

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Current POU: Get_IP	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:26

POU: GestionUsuarios, hoja de trabajo: GestionUsuarios

```
IF password = new_password THEN  
  xDatosCorrectos:=TRUE;  
END_IF;
```

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Current POU: GestionUsuarios	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:27

POU: ValoresTCP_RTU, hoja de trabajo: ValoresTCP_RTU

FOR i:=1 TO 52 do

 SelecTCPRTU_1(INPUT_TCP:=arrValores_TCP[i>(* REAL *),
 INPUT_RTU:=arrValores_RTU[i>(* REAL *)]);

 case i OF

 1 : U12:=SelecTCPRTU_1.salida;
 2 : U23:=SelecTCPRTU_1.salida;
 3 : U31:=SelecTCPRTU_1.salida;
 4 : V1:=SelecTCPRTU_1.salida;
 5 : V2:=SelecTCPRTU_1.salida;
 6 : V3:=SelecTCPRTU_1.salida;
 7 : I1:=SelecTCPRTU_1.salida;
 8 : I2:=SelecTCPRTU_1.salida;
 9 : I3:=SelecTCPRTU_1.salida;
 10 : In:=SelecTCPRTU_1.salida;
 11 : Frec:=SelecTCPRTU_1.salida;
 12 : Pt:=SelecTCPRTU_1.salida;
 13 : Qt:=SelecTCPRTU_1.salida;
 14 : S_t:=SelecTCPRTU_1.salida;
 15 : fdpt:=SelecTCPRTU_1.salida;
 16 : P1:=SelecTCPRTU_1.salida;
 17 : Q1:=SelecTCPRTU_1.salida;
 18 : S1:=SelecTCPRTU_1.salida;
 19 : fdp1:=SelecTCPRTU_1.salida;
 20 : P2:=SelecTCPRTU_1.salida;
 21 : Q2:=SelecTCPRTU_1.salida;
 22 : S2:=SelecTCPRTU_1.salida;
 23 : fdp2:=SelecTCPRTU_1.salida;
 24 : P3:=SelecTCPRTU_1.salida;
 25 : Q3:=SelecTCPRTU_1.salida;
 26 : S3:=SelecTCPRTU_1.salida;
 27 : fdp3:=SelecTCPRTU_1.salida;
 28 : U12_med:=SelecTCPRTU_1.salida;
 29 : U31_med:=SelecTCPRTU_1.salida;
 30 : U23_med:=SelecTCPRTU_1.salida;
 31 : V1_med:=SelecTCPRTU_1.salida;
 32 : V2_med:=SelecTCPRTU_1.salida;
 33 : V3_med:=SelecTCPRTU_1.salida;
 34 : Pt_med:=SelecTCPRTU_1.salida;
 35 : Qt_med:=SelecTCPRTU_1.salida;
 36 : St_med:=SelecTCPRTU_1.salida;
 37 : I1_med:=SelecTCPRTU_1.salida;
 38 : I2_med:=SelecTCPRTU_1.salida;
 39 : I3_med:=SelecTCPRTU_1.salida;
 40 : In_med:=SelecTCPRTU_1.salida;
 41 : Frec_med:=SelecTCPRTU_1.salida;
 42 : V1_max:=SelecTCPRTU_1.salida;
 43 : V2_max:=SelecTCPRTU_1.salida;
 44 : V3_max:=SelecTCPRTU_1.salida;
 45 : Pt_max:=SelecTCPRTU_1.salida;
 46 : Qt_max:=SelecTCPRTU_1.salida;
 47 : St_max:=SelecTCPRTU_1.salida;
 48 : I1_max:=SelecTCPRTU_1.salida;
 49 : I2_max:=SelecTCPRTU_1.salida;
 50 : I3_max:=SelecTCPRTU_1.salida;
 51 : In_max:=SelecTCPRTU_1.salida;
 52 : Frec_max:=SelecTCPRTU_1.salida;

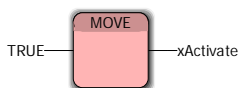
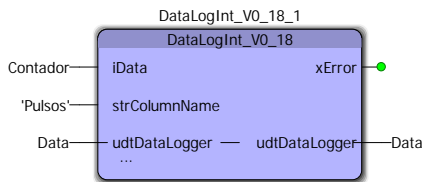
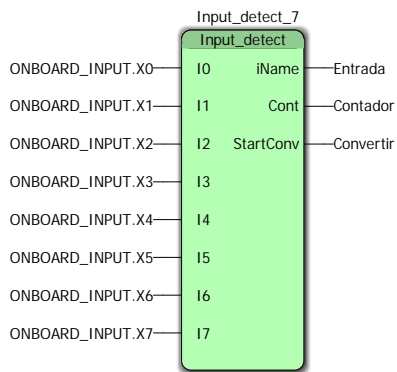
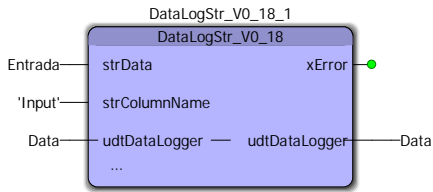
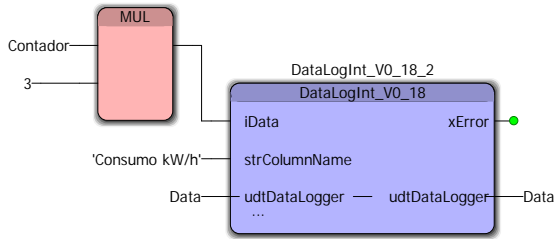
 end_case;

END_FOR;

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<p>Current POU: ValoresTCP_RTU</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:27</p>

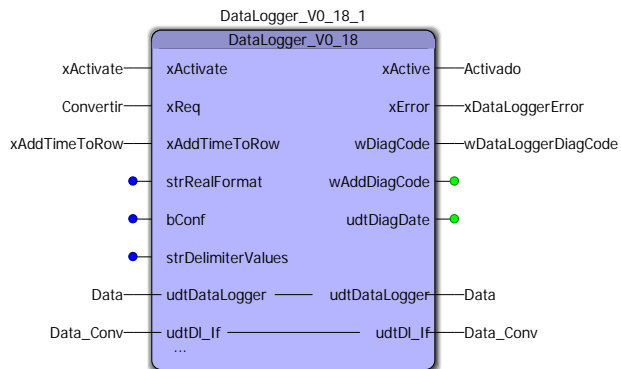
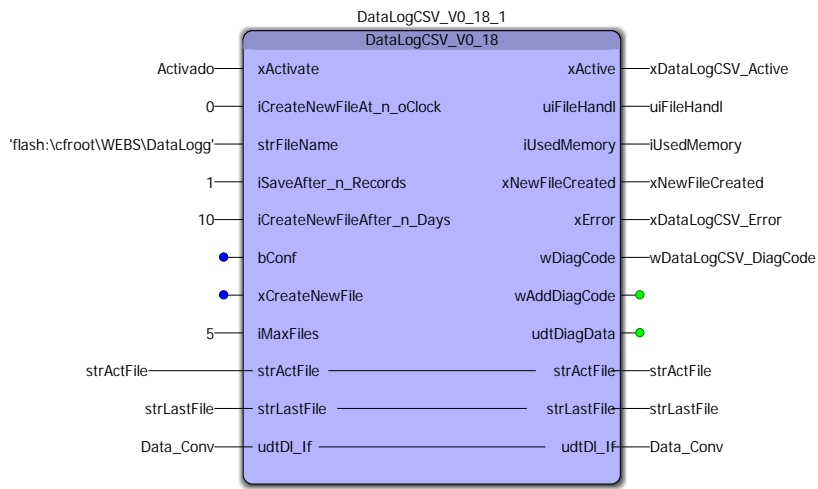
POU: Pulses_S0_Datalogger_E_S, hoja de trabajo: Datalogger_E_S

(*Escritura de datos en binario en una estructura de datos*)



(*Conversion datos Binario-ASCII*)

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<p>Current POU: Pulses_S0_Datalogger_E_S</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:27</p>



(*Programa preparado para almacenar en Datalogger (almacenamiento local en el PLC)

(xactivate=1)

.Envia una trama de datos cada vez que una de las entradas Ix se activa (Convert

ir =1)

Los datos son:

TIPO	STRING	INT	INT
	nombre entrada activa	num pulsos	consumo(cada pulso eq kw/h)*

POU: Input_detect, hoja de trabajo: Input_detect

(*Cada vez que se recibe un pulso en alguna de las entradas, se incrementa el contador correspondiente a esa entrada, y se almacena el numero de la entrada activada. Si alguna de las entradas esta activa se activa la variable StartConv, si todas las entradas desactivadas se StartConv:=false. StartConv variable que si se encuentra activa se envian/al los datos en el datalogger. StartConv=false no se esta enviando ningun dato aunque la comuni con el datalogger este abierta*)

```
R_TRIG_0(CLK:=(I0));  
R_TRIG_1(CLK:=(I1));  
R_TRIG_2(CLK:=(I2));  
R_TRIG_3(CLK:=(I3));  
R_TRIG_4(CLK:=(I4));  
R_TRIG_5(CLK:=(I5));  
R_TRIG_6(CLK:=(I6));  
R_TRIG_7(CLK:=(I7));
```

```
cte:=3;
```

```
IF R_TRIG_0.Q THEN  
  iName:='I0';  
  iCont0:=iCont0+1;  
  Cont:=iCont0;  
  Consumo_0:=iCont0*cte;  
END_IF;
```

```
IF R_TRIG_1.Q THEN  
  iName:='I1';  
  iCont1:=iCont1+1;  
  Cont:=iCont1;  
  Consumo_1:=iCont1*cte;  
END_IF;
```

```
IF R_TRIG_2.Q THEN  
  iName:='I2';  
  iCont2:=iCont2+1;  
  Cont:=iCont2;  
  Consumo_2:=iCont2*cte;  
END_IF;
```

```
IF R_TRIG_3.Q THEN  
  iName:='I3';  
  iCont3:=iCont3+1;  
  Cont:=iCont3;  
  Consumo_3:=iCont3*cte;  
END_IF;
```

```
IF R_TRIG_4.Q THEN  
  iName:='I4';  
  iCont4:=iCont4+1;  
  Cont:=iCont4;  
  Consumo_4:=iCont4*cte;  
END_IF;
```

```
IF R_TRIG_5.Q THEN  
  iName:='I5';  
  iCont5:=iCont5+1;  
  Cont:=iCont5;  
  Consumo_5:=iCont5*cte;  
END_IF;
```

```
IF R_TRIG_6.Q THEN  
  iName:='I6';
```

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Current POU: Input_detect	TFM_v01_back	This copy printed out at: 19/02/2015 16:15:27

```

    iCont6:=iCont6+1;
    Cont:=iCont6;
    Consumo_6:=iCont6*cte;
END_IF;

```

```

IF R_TRIG_7.Q THEN
    iName:='I7';
    iCont7:=iCont7+1;
    Cont:=iCont7;
    Consumo_7:=iCont7*cte;
END_IF;

```

```

IF ( I0 OR I1 OR I3 OR I4 OR I5 OR I6 OR I7) THEN
    StartConv:=TRUE;
ELSE IF (I0 AND I1 AND I2 AND I3 AND I4 AND I5 AND I6 AND I7)=FALSE THEN
    StartConv:=FALSE;
END_IF;
END_IF;

```

```

(*IF ( R_TRIG_0.Q OR R_TRIG_1.Q OR R_TRIG_2.Q OR R_TRIG_3.Q OR R_TRIG_4.Q OR R_TRIG_5.Q OR
    StartConv:=TRUE;
ELSE IF (R_TRIG_0.Q AND R_TRIG_1.Q AND R_TRIG_2.Q AND R_TRIG_3.Q AND R_TRIG_4.Q AND R_T
    StartConv:=FALSE;
END_IF;
END_IF;*)

```

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<p>Current POU: Input_detect</p>	<p>TFM_v01_back</p>	<p>This copy printed out at: 19/02/2015 16:15:27</p>