

Beckhoff Automação Industrial

Controle Baseado em PC no Gerenciamento da Água



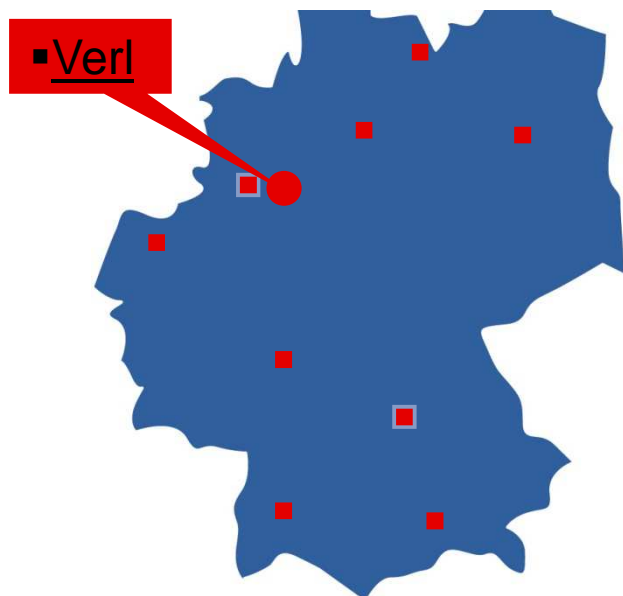
Soluções de automação para o Gerenciamento da Água

- A Beckhoff implementa sistemas abertos de automação baseados na tecnologia de controle no PC.
- A filosofia Beckhoff da “Nova Tecnologia de Automação” significa um controle universal e aberto para soluções de automação utilizadas mundialmente numa ampla variedade de aplicações diferentes, desde máquinas ferramentas controladas por CNC até a automação de prédios inteligentes.

Beckhoff | Controle no PC para o Gerenciamento da Água

Beckhoff Automation | Fatos & Numeros

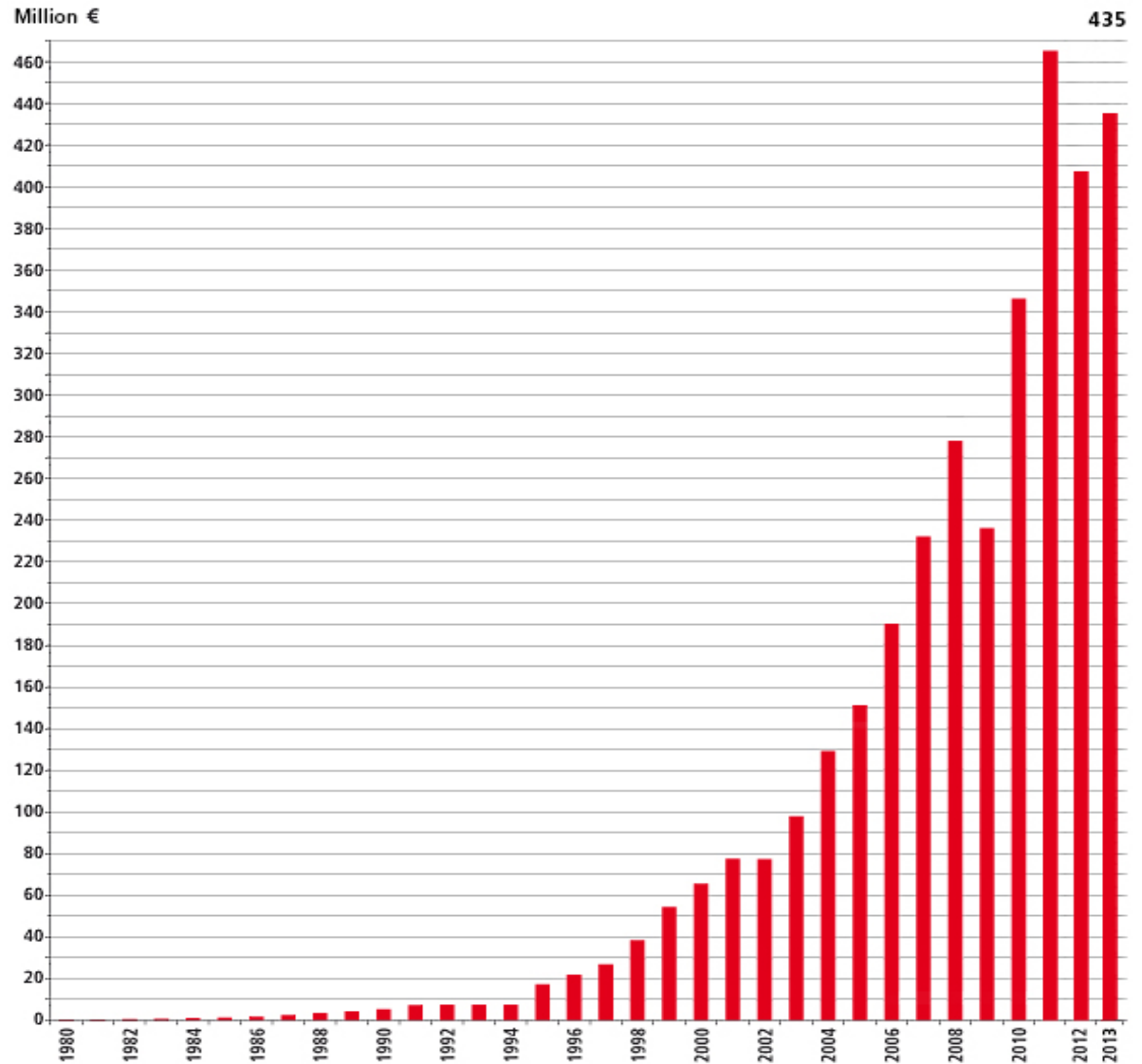
- Sede: Verl, Alemanha
- Colaboradores: 2510 Colaboradores pelo mundo
- Engenheiros: 750
- Filiais na Alemanha: 11
- Filiais pelo mundo: 33 países
- Rede de Vendas: 62 países
- Faturamento 2011: 465 m. € (+34 %)
- Faturamento 2013: 450 m. € (+30 %)



Beckhoff | Controle no PC para o Gerenciamento da Água

Beckhoff Automation | Fatos & Numeros

BECKHOFF New Automation Technology



BECKHOFF New Automation Technology



Beckhoff | Controle no PC para o Gerenciamento da Água

Beckhoff Automação Industrial | Brasil

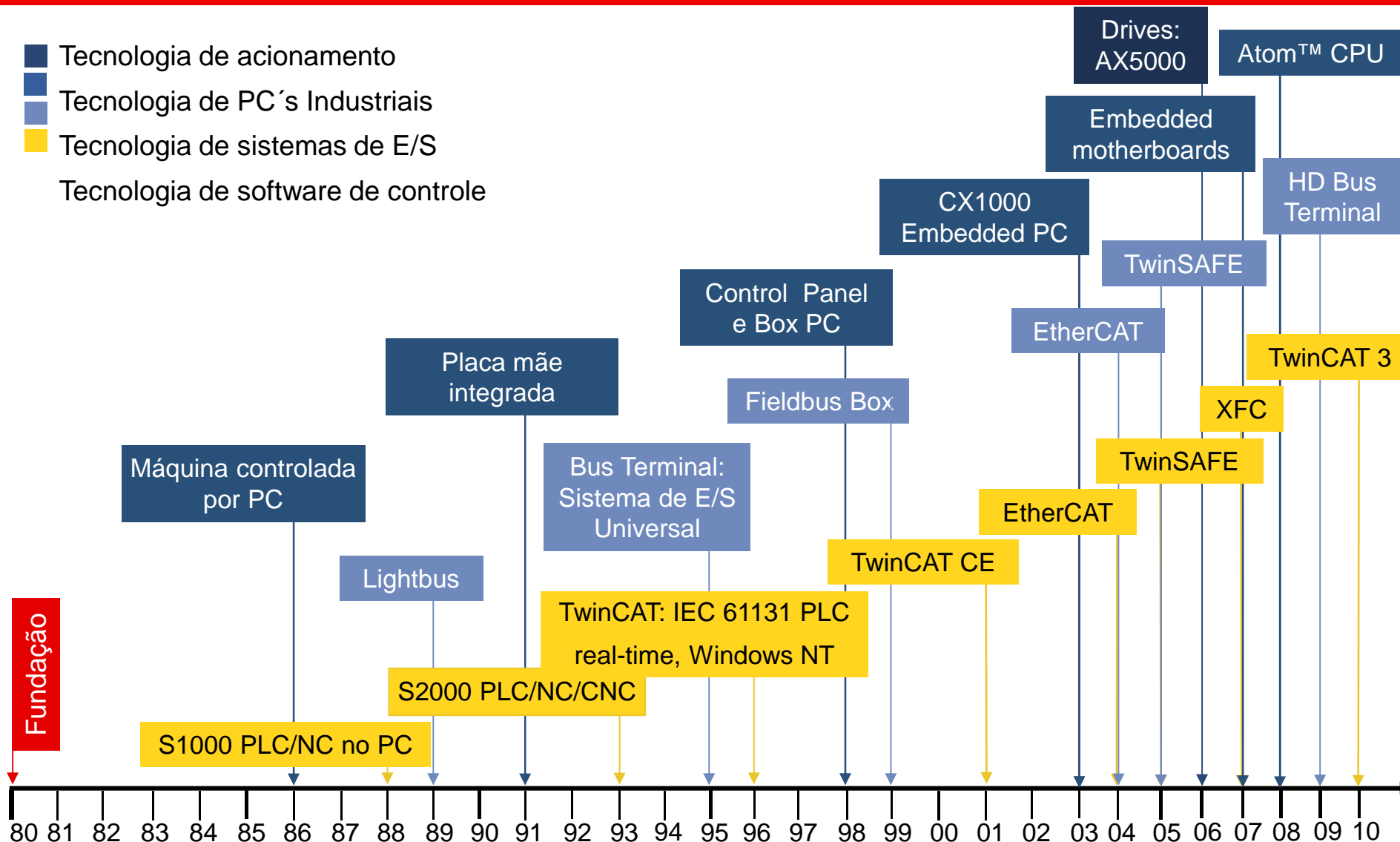
- Matriz:
- Em Santo André – SP
 - Estoque local;
 - Suporte Técnico;
 - Assistência Técnica;
 - Vendas;
- Filial em Campinas:
 - Vendas
 - Suporte Técnico
- Filial em Joinville - SC
 - Vendas
 - Suporte Técnico
- Filial em Novo Hamburgo – RS
 - Vendas/Suporte no Estado
 - Vendas/Suporte América do Sul



Beckhoff | Controle no PC para o Gerenciamento da Água

Competência em tecnologia de controle

- Tecnologia de acionamento
- Tecnologia de PC's Industriais
- Tecnologia de sistemas de E/S
- Tecnologia de software de controle



Beckhoff | Controle no PC para o Gerenciamento da Água

Produtos & Soluções

▪ Industrial PC



▪ Fieldbus Box



▪ TwinCAT



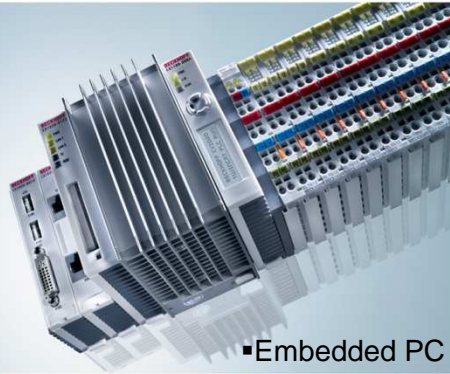
I/O

EtherCAT

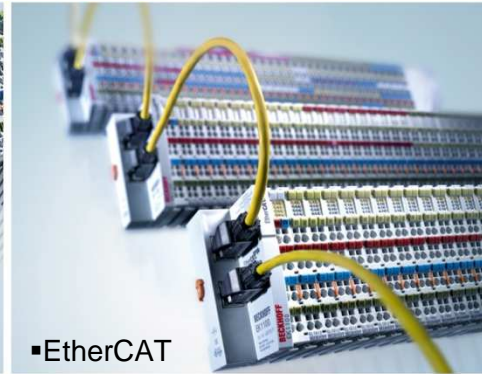
▪ Bus Terminal



▪ Embedded PC



▪ EtherCAT

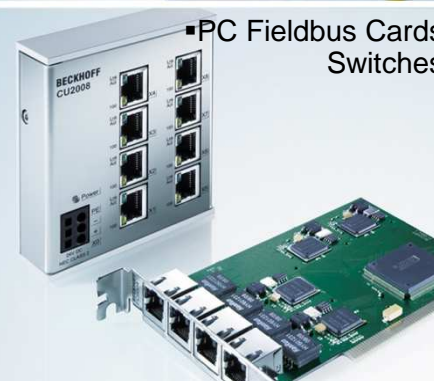


Automation

Motion

IPC

▪ PC Fieldbus Cards Switches



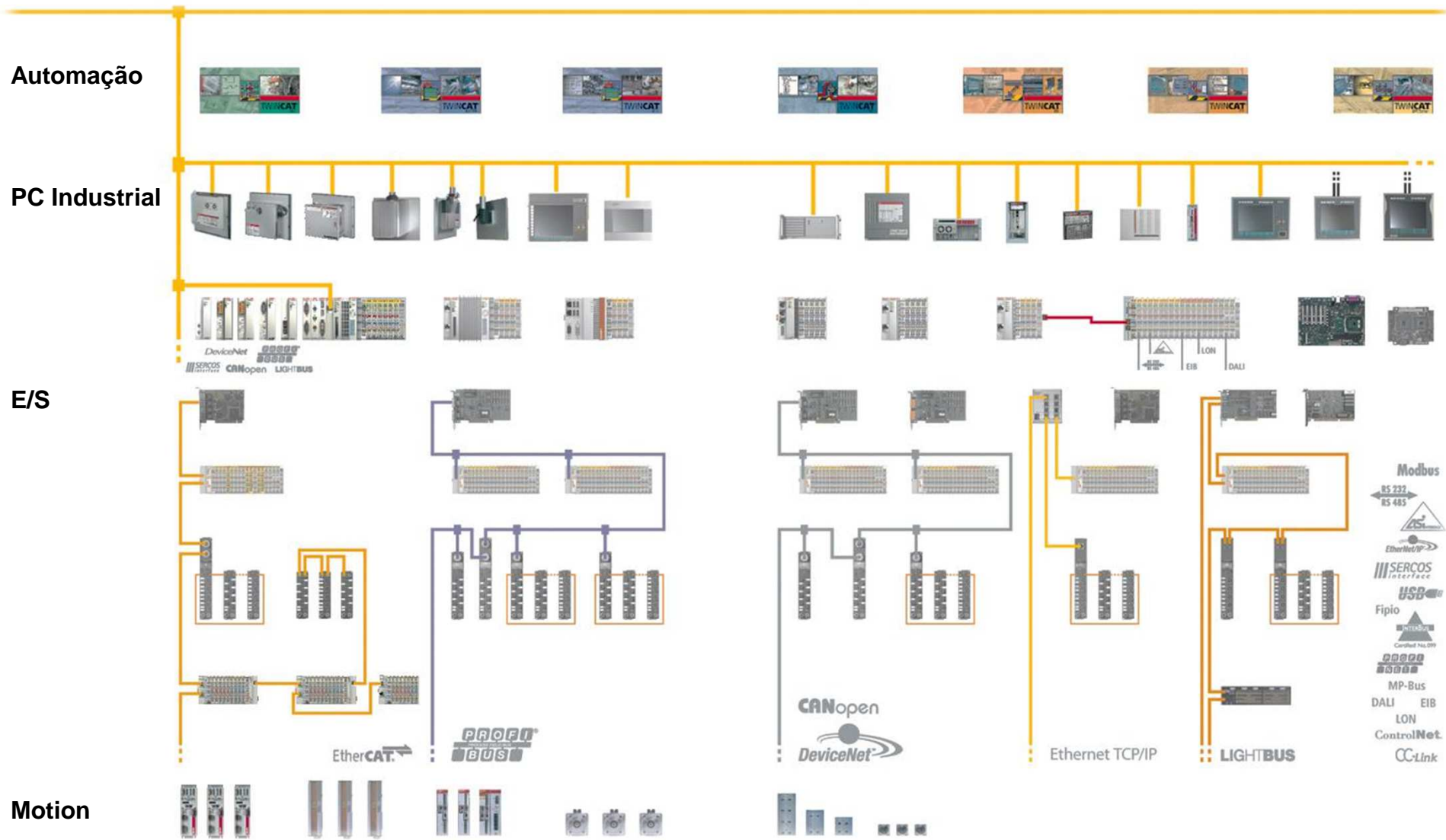
▪ Drive Technology





Beckhoff | Controle no PC para o Gerenciamento da Água

Visão Geral dos Produtos





Wasserwerk Konstanz, Alemanha



HST Hydro-Systemtechnik GmbH, Alemanha



Zweckverband Wasser und Abwasser Vogtland, Alemanha



IFA mbH, Alemanha



SABESP, Brasil



Tratamento de Água | Constance, Alemanha

Wasserwerk Konstanz



Tratamento de Água | Constance, Alemanha

Wasserwerk Konstanz

IPC

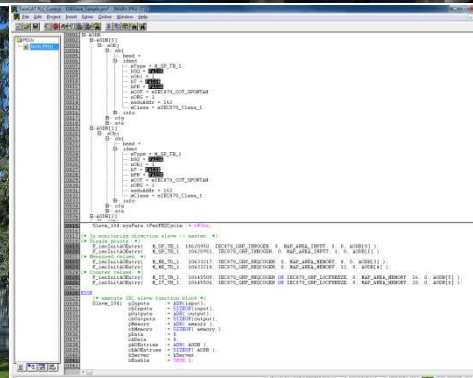
- 2 C6925 control cabinet Industrial PCs
- 6 Control Panels
- 7 CX9001 Embedded PCs

I/O

- 15 BK9050 Modbus TCP Bus Couplers
- digital and analog Bus Terminal I/Os

Automation

- TwinCAT PLC
- TwinCAT library for communication via the telecontrol protocol according to IEC 60870-5-104

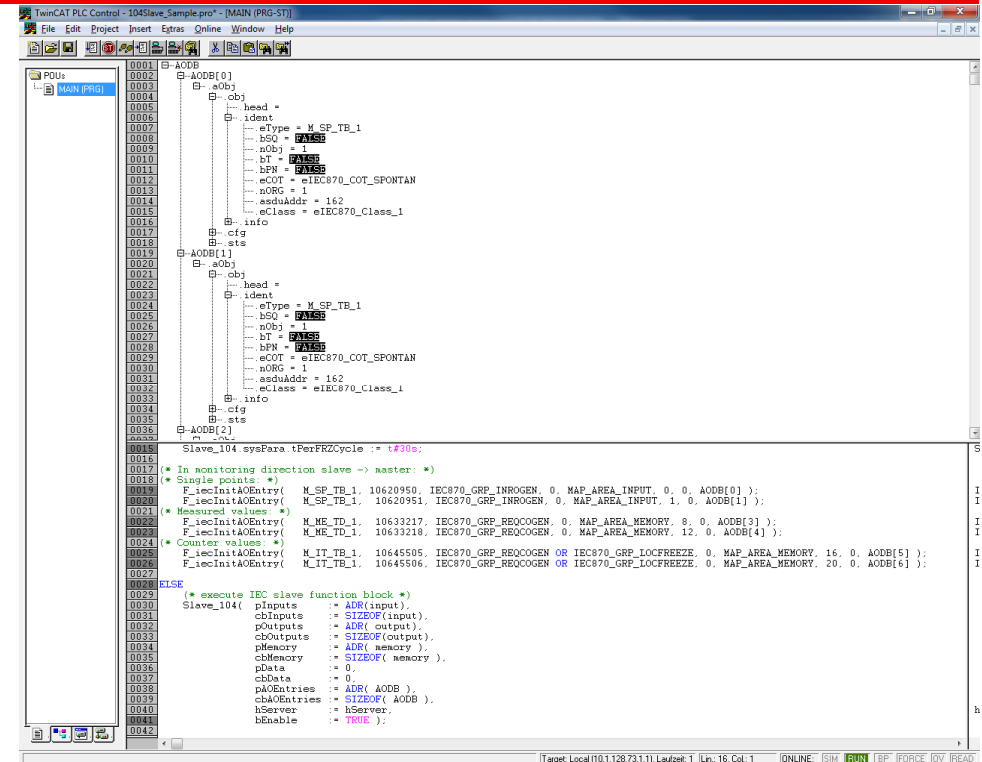


Tratamento de Água | Constance, Alemanha

Wasserwerk Konstanz

Retrofitting of the control system for drinking water production at Konstanz waterworks with a PC-based control platform from Beckhoff

- Fully automatic, PC-based control platform handles all operational control and monitoring tasks at the waterworks.
- Water from Lake Constance is taken through 16 substations to produce drinking water for the town and the region.



```
00001  ▭ AODB
00002  ▭ AODB[0]
00003  ▭ aObj
00004  ▭ aObj
00005  ▭ head
00006  ▭ ident
00007  ▭ eType = M.SP_TB_1
00008  ▭ bSQ = FALSE
00009  ▭ nObj = 1
00010  ▭ bT = FALSE
00011  ▭ bFN = FALSE
00012  ▭ eCOT = eIEC870_COT_SPONTAN
00013  ▭ nORG = 1
00014  ▭ asduAddr = 162
00015  ▭ eClass = eIEC870_Class_1
00016  ▭ info
00017  ▭ cfg
00018  ▭ sts
00019  ▭ AODB[1]
00020  ▭ aObj
00021  ▭ aObj
00022  ▭ head
00023  ▭ ident
00024  ▭ eType = M.SP_TB_1
00025  ▭ bSQ = FALSE
00026  ▭ nObj = 1
00027  ▭ bT = FALSE
00028  ▭ bFN = FALSE
00029  ▭ eCOT = eIEC870_COT_SPONTAN
00030  ▭ nORG = 1
00031  ▭ asduAddr = 162
00032  ▭ eClass = eIEC870_Class_1
00033  ▭ info
00034  ▭ cfg
00035  ▭ sts
00036  ▭ AODB[2]
00037  ▭ aObj
00038  ▭ aObj
00039  ▭ head
00040  ▭ ident
00041  ▭ eType = M.SP_TB_1
00042  ▭ bSQ = FALSE
00043  ▭ nObj = 1
00044  ▭ bT = FALSE
00045  ▭ bFN = FALSE
00046  ▭ eCOT = eIEC870_COT_SPONTAN
00047  ▭ nORG = 1
00048  ▭ asduAddr = 162
00049  ▭ eClass = eIEC870_Class_1
00050  ▭ info
00051  ▭ cfg
00052  ▭ sts
00053  ▭ AODB[3]
00054  ▭ aObj
00055  ▭ aObj
00056  ▭ head
00057  ▭ ident
00058  ▭ eType = M.SP_TB_1
00059  ▭ bSQ = FALSE
00060  ▭ nObj = 1
00061  ▭ bT = FALSE
00062  ▭ bFN = FALSE
00063  ▭ eCOT = eIEC870_COT_SPONTAN
00064  ▭ nORG = 1
00065  ▭ asduAddr = 162
00066  ▭ eClass = eIEC870_Class_1
00067  ▭ info
00068  ▭ cfg
00069  ▭ sts
00070  ▭ AODB[4]
00071  ▭ aObj
00072  ▭ aObj
00073  ▭ head
00074  ▭ ident
00075  ▭ eType = M.SP_TB_1
00076  ▭ bSQ = FALSE
00077  ▭ nObj = 1
00078  ▭ bT = FALSE
00079  ▭ bFN = FALSE
00080  ▭ eCOT = eIEC870_COT_SPONTAN
00081  ▭ nORG = 1
00082  ▭ asduAddr = 162
00083  ▭ eClass = eIEC870_Class_1
00084  ▭ info
00085  ▭ cfg
00086  ▭ sts
00087  ▭ AODB[5]
00088  ▭ aObj
00089  ▭ aObj
00090  ▭ head
00091  ▭ ident
00092  ▭ eType = M.SP_TB_1
00093  ▭ bSQ = FALSE
00094  ▭ nObj = 1
00095  ▭ bT = FALSE
00096  ▭ bFN = FALSE
00097  ▭ eCOT = eIEC870_COT_SPONTAN
00098  ▭ nORG = 1
00099  ▭ asduAddr = 162
00100  ▭ eClass = eIEC870_Class_1
00101  ▭ info
00102  ▭ cfg
00103  ▭ sts
00104  ▭ AODB[6]
00105  ▭ aObj
00106  ▭ aObj
00107  ▭ head
00108  ▭ ident
00109  ▭ eType = M.SP_TB_1
00110  ▭ bSQ = FALSE
00111  ▭ nObj = 1
00112  ▭ bT = FALSE
00113  ▭ bFN = FALSE
00114  ▭ eCOT = eIEC870_COT_SPONTAN
00115  ▭ nORG = 1
00116  ▭ asduAddr = 162
00117  ▭ eClass = eIEC870_Class_1
00118  ▭ info
00119  ▭ cfg
00120  ▭ sts
00121  ▭ AODB[7]
00122  ▭ aObj
00123  ▭ aObj
00124  ▭ head
00125  ▭ ident
00126  ▭ eType = M.SP_TB_1
00127  ▭ bSQ = FALSE
00128  ▭ nObj = 1
00129  ▭ bT = FALSE
00130  ▭ bFN = FALSE
00131  ▭ eCOT = eIEC870_COT_SPONTAN
00132  ▭ nORG = 1
00133  ▭ asduAddr = 162
00134  ▭ eClass = eIEC870_Class_1
00135  ▭ info
00136  ▭ cfg
00137  ▭ sts
00138  ▭ AODB[8]
00139  ▭ aObj
00140  ▭ aObj
00141  ▭ head
00142  ▭ ident
00143  ▭ eType = M.SP_TB_1
00144  ▭ bSQ = FALSE
00145  ▭ nObj = 1
00146  ▭ bT = FALSE
00147  ▭ bFN = FALSE
00148  ▭ eCOT = eIEC870_COT_SPONTAN
00149  ▭ nORG = 1
00150  ▭ asduAddr = 162
00151  ▭ eClass = eIEC870_Class_1
00152  ▭ info
00153  ▭ cfg
00154  ▭ sts
00155  ▭ AODB[9]
00156  ▭ aObj
00157  ▭ aObj
00158  ▭ head
00159  ▭ ident
00160  ▭ eType = M.SP_TB_1
00161  ▭ bSQ = FALSE
00162  ▭ nObj = 1
00163  ▭ bT = FALSE
00164  ▭ bFN = FALSE
00165  ▭ eCOT = eIEC870_COT_SPONTAN
00166  ▭ nORG = 1
00167  ▭ asduAddr = 162
00168  ▭ eClass = eIEC870_Class_1
00169  ▭ info
00170  ▭ cfg
00171  ▭ sts
00172  ▭ AODB[10]
00173  ▭ aObj
00174  ▭ aObj
00175  ▭ head
00176  ▭ ident
00177  ▭ eType = M.SP_TB_1
00178  ▭ bSQ = FALSE
00179  ▭ nObj = 1
00180  ▭ bT = FALSE
00181  ▭ bFN = FALSE
00182  ▭ eCOT = eIEC870_COT_SPONTAN
00183  ▭ nORG = 1
00184  ▭ asduAddr = 162
00185  ▭ eClass = eIEC870_Class_1
00186  ▭ info
00187  ▭ cfg
00188  ▭ sts
00189  ▭ AODB[11]
00190  ▭ aObj
00191  ▭ aObj
00192  ▭ head
00193  ▭ ident
00194  ▭ eType = M.SP_TB_1
00195  ▭ bSQ = FALSE
00196  ▭ nObj = 1
00197  ▭ bT = FALSE
00198  ▭ bFN = FALSE
00199  ▭ eCOT = eIEC870_COT_SPONTAN
00200  ▭ nORG = 1
00201  ▭ asduAddr = 162
00202  ▭ eClass = eIEC870_Class_1
00203  ▭ info
00204  ▭ cfg
00205  ▭ sts
00206  ▭ AODB[12]
00207  ▭ aObj
00208  ▭ aObj
00209  ▭ head
00210  ▭ ident
00211  ▭ eType = M.SP_TB_1
00212  ▭ bSQ = FALSE
00213  ▭ nObj = 1
00214  ▭ bT = FALSE
00215  ▭ bFN = FALSE
00216  ▭ eCOT = eIEC870_COT_SPONTAN
00217  ▭ nORG = 1
00218  ▭ asduAddr = 162
00219  ▭ eClass = eIEC870_Class_1
00220  ▭ info
00221  ▭ cfg
00222  ▭ sts
00223  ▭ AODB[13]
00224  ▭ aObj
00225  ▭ aObj
00226  ▭ head
00227  ▭ ident
00228  ▭ eType = M.SP_TB_1
00229  ▭ bSQ = FALSE
00230  ▭ nObj = 1
00231  ▭ bT = FALSE
00232  ▭ bFN = FALSE
00233  ▭ eCOT = eIEC870_COT_SPONTAN
00234  ▭ nORG = 1
00235  ▭ asduAddr = 162
00236  ▭ eClass = eIEC870_Class_1
00237  ▭ info
00238  ▭ cfg
00239  ▭ sts
00240  ▭ AODB[14]
00241  ▭ aObj
00242  ▭ aObj
00243  ▭ head
00244  ▭ ident
00245  ▭ eType = M.SP_TB_1
00246  ▭ bSQ = FALSE
00247  ▭ nObj = 1
00248  ▭ bT = FALSE
00249  ▭ bFN = FALSE
00250  ▭ eCOT = eIEC870_COT_SPONTAN
00251  ▭ nORG = 1
00252  ▭ asduAddr = 162
00253  ▭ eClass = eIEC870_Class_1
00254  ▭ info
00255  ▭ cfg
00256  ▭ sts
00257  ▭ AODB[15]
00258  ▭ aObj
00259  ▭ aObj
00260  ▭ head
00261  ▭ ident
00262  ▭ eType = M.SP_TB_1
00263  ▭ bSQ = FALSE
00264  ▭ nObj = 1
00265  ▭ bT = FALSE
00266  ▭ bFN = FALSE
00267  ▭ eCOT = eIEC870_COT_SPONTAN
00268  ▭ nORG = 1
00269  ▭ asduAddr = 162
00270  ▭ eClass = eIEC870_Class_1
00271  ▭ info
00272  ▭ cfg
00273  ▭ sts
00274  ▭ AODB[16]
00275  ▭ aObj
00276  ▭ aObj
00277  ▭ head
00278  ▭ ident
00279  ▭ eType = M.SP_TB_1
00280  ▭ bSQ = FALSE
00281  ▭ nObj = 1
00282  ▭ bT = FALSE
00283  ▭ bFN = FALSE
00284  ▭ eCOT = eIEC870_COT_SPONTAN
00285  ▭ nORG = 1
00286  ▭ asduAddr = 162
00287  ▭ eClass = eIEC870_Class_1
00288  ▭ info
00289  ▭ cfg
00290  ▭ sts
00291  ▭ AODB[17]
00292  ▭ aObj
00293  ▭ aObj
00294  ▭ head
00295  ▭ ident
00296  ▭ eType = M.SP_TB_1
00297  ▭ bSQ = FALSE
00298  ▭ nObj = 1
00299  ▭ bT = FALSE
00300  ▭ bFN = FALSE
00301  ▭ eCOT = eIEC870_COT_SPONTAN
00302  ▭ nORG = 1
00303  ▭ asduAddr = 162
00304  ▭ eClass = eIEC870_Class_1
00305  ▭ info
00306  ▭ cfg
00307  ▭ sts
00308  ▭ AODB[18]
00309  ▭ aObj
00310  ▭ aObj
00311  ▭ head
00312  ▭ ident
00313  ▭ eType = M.SP_TB_1
00314  ▭ bSQ = FALSE
00315  ▭ nObj = 1
00316  ▭ bT = FALSE
00317  ▭ bFN = FALSE
00318  ▭ eCOT = eIEC870_COT_SPONTAN
00319  ▭ nORG = 1
00320  ▭ asduAddr = 162
00321  ▭ eClass = eIEC870_Class_1
00322  ▭ info
00323  ▭ cfg
00324  ▭ sts
00325  ▭ AODB[19]
00326  ▭ aObj
00327  ▭ aObj
00328  ▭ head
00329  ▭ ident
00330  ▭ eType = M.SP_TB_1
00331  ▭ bSQ = FALSE
00332  ▭ nObj = 1
00333  ▭ bT = FALSE
00334  ▭ bFN = FALSE
00335  ▭ eCOT = eIEC870_COT_SPONTAN
00336  ▭ nORG = 1
00337  ▭ asduAddr = 162
00338  ▭ eClass = eIEC870_Class_1
00339  ▭ info
00340  ▭ cfg
00341  ▭ sts
00342  ▭ AODB[20]
00343  ▭ aObj
00344  ▭ aObj
00345  ▭ head
00346  ▭ ident
00347  ▭ eType = M.SP_TB_1
00348  ▭ bSQ = FALSE
00349  ▭ nObj = 1
00350  ▭ bT = FALSE
00351  ▭ bFN = FALSE
00352  ▭ eCOT = eIEC870_COT_SPONTAN
00353  ▭ nORG = 1
00354  ▭ asduAddr = 162
00355  ▭ eClass = eIEC870_Class_1
00356  ▭ info
00357  ▭ cfg
00358  ▭ sts
00359  ▭ AODB[21]
00360  ▭ aObj
00361  ▭ aObj
00362  ▭ head
00363  ▭ ident
00364  ▭ eType = M.SP_TB_1
00365  ▭ bSQ = FALSE
00366  ▭ nObj = 1
00367  ▭ bT = FALSE
00368  ▭ bFN = FALSE
00369  ▭ eCOT = eIEC870_COT_SPONTAN
00370  ▭ nORG = 1
00371  ▭ asduAddr = 162
00372  ▭ eClass = eIEC870_Class_1
00373  ▭ info
00374  ▭ cfg
00375  ▭ sts
00376  ▭ AODB[22]
00377  ▭ aObj
00378  ▭ aObj
00379  ▭ head
00380  ▭ ident
00381  ▭ eType = M.SP_TB_1
00382  ▭ bSQ = FALSE
00383  ▭ nObj = 1
00384  ▭ bT = FALSE
00385  ▭ bFN = FALSE
00386  ▭ eCOT = eIEC870_COT_SPONTAN
00387  ▭ nORG = 1
00388  ▭ asduAddr = 162
00389  ▭ eClass = eIEC870_Class_1
00390  ▭ info
00391  ▭ cfg
00392  ▭ sts
00393  ▭ AODB[23]
00394  ▭ aObj
00395  ▭ aObj
00396  ▭ head
00397  ▭ ident
00398  ▭ eType = M.SP_TB_1
00399  ▭ bSQ = FALSE
00400  ▭ nObj = 1
00401  ▭ bT = FALSE
00402  ▭ bFN = FALSE
00403  ▭ eCOT = eIEC870_COT_SPONTAN
00404  ▭ nORG = 1
00405  ▭ asduAddr = 162
00406  ▭ eClass = eIEC870_Class_1
00407  ▭ info
00408  ▭ cfg
00409  ▭ sts
00410  ▭ AODB[24]
00411  ▭ aObj
00412  ▭ aObj
00413  ▭ head
00414  ▭ ident
00415  ▭ eType = M.SP_TB_1
00416  ▭ bSQ = FALSE
00417  ▭ nObj = 1
00418  ▭ bT = FALSE
00419  ▭ bFN = FALSE
00420  ▭ eCOT = eIEC870_COT_SPONTAN
00421  ▭ nORG = 1
00422  ▭ asduAddr = 162
00423  ▭ eClass = eIEC870_Class_1
00424  ▭ info
00425  ▭ cfg
00426  ▭ sts
00427  ▭ AODB[25]
00428  ▭ aObj
00429  ▭ aObj
00430  ▭ head
00431  ▭ ident
00432  ▭ eType = M.SP_TB_1
00433  ▭ bSQ = FALSE
00434  ▭ nObj = 1
00435  ▭ bT = FALSE
00436  ▭ bFN = FALSE
00437  ▭ eCOT = eIEC870_COT_SPONTAN
00438  ▭ nORG = 1
00439  ▭ asduAddr = 162
00440  ▭ eClass = eIEC870_Class_1
00441  ▭ info
00442  ▭ cfg
00443  ▭ sts
00444  ▭ AODB[26]
00445  ▭ aObj
00446  ▭ aObj
00447  ▭ head
00448  ▭ ident
00449  ▭ eType = M.SP_TB_1
00450  ▭ bSQ = FALSE
00451  ▭ nObj = 1
00452  ▭ bT = FALSE
00453  ▭ bFN = FALSE
00454  ▭ eCOT = eIEC870_COT_SPONTAN
00455  ▭ nORG = 1
00456  ▭ asduAddr = 162
00457  ▭ eClass = eIEC870_Class_1
00458  ▭ info
00459  ▭ cfg
00460  ▭ sts
00461  ▭ AODB[27]
00462  ▭ aObj
00463  ▭ aObj
00464  ▭ head
00465  ▭ ident
00466  ▭ eType = M.SP_TB_1
00467  ▭ bSQ = FALSE
00468  ▭ nObj = 1
00469  ▭ bT = FALSE
00470  ▭ bFN = FALSE
00471  ▭ eCOT = eIEC870_COT_SPONTAN
00472  ▭ nORG = 1
00473  ▭ asduAddr = 162
00474  ▭ eClass = eIEC870_Class_1
00475  ▭ info
00476  ▭ cfg
00477  ▭ sts
00478  ▭ AODB[28]
00479  ▭ aObj
00480  ▭ aObj
00481  ▭ head
00482  ▭ ident
00483  ▭ eType = M.SP_TB_1
00484  ▭ bSQ = FALSE
00485  ▭ nObj = 1
00486  ▭ bT = FALSE
00487  ▭ bFN = FALSE
00488  ▭ eCOT = eIEC870_COT_SPONTAN
00489  ▭ nORG = 1
00490  ▭ asduAddr = 162
00491  ▭ eClass = eIEC870_Class_1
00492  ▭ info
00493  ▭ cfg
00494  ▭ sts
00495  ▭ AODB[29]
00496  ▭ aObj
00497  ▭ aObj
00498  ▭ head
00499  ▭ ident
00500  ▭ eType = M.SP_TB_1
00501  ▭ bSQ = FALSE
00502  ▭ nObj = 1
00503  ▭ bT = FALSE
00504  ▭ bFN = FALSE
00505  ▭ eCOT = eIEC870_COT_SPONTAN
00506  ▭ nORG = 1
00507  ▭ asduAddr = 162
00508  ▭ eClass = eIEC870_Class_1
00509  ▭ info
00510  ▭ cfg
00511  ▭ sts
00512  ▭ AODB[30]
00513  ▭ aObj
00514  ▭ aObj
00515  ▭ head
00516  ▭ ident
00517  ▭ eType = M.SP_TB_1
00518  ▭ bSQ = FALSE
00519  ▭ nObj = 1
00520  ▭ bT = FALSE
00521  ▭ bFN = FALSE
00522  ▭ eCOT = eIEC870_COT_SPONTAN
00523  ▭ nORG = 1
00524  ▭ asduAddr = 162
00525  ▭ eClass = eIEC870_Class_1
00526  ▭ info
00527  ▭ cfg
00528  ▭ sts
00529  ▭ AODB[31]
00530  ▭ aObj
00531  ▭ aObj
00532  ▭ head
00533  ▭ ident
00534  ▭ eType = M.SP_TB_1
00535  ▭ bSQ = FALSE
00536  ▭ nObj = 1
00537  ▭ bT = FALSE
00538  ▭ bFN = FALSE
00539  ▭ eCOT = eIEC870_COT_SPONTAN
00540  ▭ nORG = 1
00541  ▭ asduAddr = 162
00542  ▭ eClass = eIEC870_Class_1
00543  ▭ info
00544  ▭ cfg
00545  ▭ sts
00546  ▭ AODB[32]
00547  ▭ aObj
00548  ▭ aObj
00549  ▭ head
00550  ▭ ident
00551  ▭ eType = M.SP_TB_1
00552  ▭ bSQ = FALSE
00553  ▭ nObj = 1
00554  ▭ bT = FALSE
00555  ▭ bFN = FALSE
00556  ▭ eCOT = eIEC870_COT_SPONTAN
00557  ▭ nORG = 1
00558  ▭ asduAddr = 162
00559  ▭ eClass = eIEC870_Class_1
00560  ▭ info
00561  ▭ cfg
00562  ▭ sts
00563  ▭ AODB[33]
00564  ▭ aObj
00565  ▭ aObj
00566  ▭ head
00567  ▭ ident
00568  ▭ eType = M.SP_TB_1
00569  ▭ bSQ = FALSE
00570  ▭ nObj = 1
00571  ▭ bT = FALSE
00572  ▭ bFN = FALSE
00573  ▭ eCOT = eIEC870_COT_SPONTAN
00574  ▭ nORG = 1
00575  ▭ asduAddr = 162
00576  ▭ eClass = eIEC870_Class_1
00577  ▭ info
00578  ▭ cfg
00579  ▭ sts
00580  ▭ AODB[34]
00581  ▭ aObj
00582  ▭ aObj
00583  ▭ head
00584  ▭ ident
00585  ▭ eType = M.SP_TB_1
00586  ▭ bSQ = FALSE
00587  ▭ nObj = 1
00588  ▭ bT = FALSE
00589  ▭ bFN = FALSE
00590  ▭ eCOT = eIEC870_COT_SPONTAN
00591  ▭ nORG = 1
00592  ▭ asduAddr = 162
00593  ▭ eClass = eIEC870_Class_1
00594  ▭ info
00595  ▭ cfg
00596  ▭ sts
00597  ▭ AODB[35]
00598  ▭ aObj
00599  ▭ aObj
00600  ▭ head
00601  ▭ ident
00602  ▭ eType = M.SP_TB_1
00603  ▭ bSQ = FALSE
00604  ▭ nObj = 1
00605  ▭ bT = FALSE
00606  ▭ bFN = FALSE
00607  ▭ eCOT = eIEC870_COT_SPONTAN
00608  ▭ nORG = 1
00609  ▭ asduAddr = 162
00610  ▭ eClass = eIEC870_Class_1
00611  ▭ info
00612  ▭ cfg
00613  ▭ sts
00614  ▭ AODB[36]
00615  ▭ aObj
00616  ▭ aObj
00617  ▭ head
00618  ▭ ident
00619  ▭ eType = M.SP_TB_1
00620  ▭ bSQ = FALSE
00621  ▭ nObj = 1
00622  ▭ bT = FALSE
00623  ▭ bFN = FALSE
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00625  ▭ nORG = 1
00626  ▭ asduAddr = 162
00627  ▭ eClass = eIEC870_Class_1
00628  ▭ info
00629  ▭ cfg
00630  ▭ sts
00631  ▭ AODB[37]
00632  ▭ aObj
00633  ▭ aObj
00634  ▭ head
00635  ▭ ident
00636  ▭ eType = M.SP_TB_1
00637  ▭ bSQ = FALSE
00638  ▭ nObj = 1
00639  ▭ bT = FALSE
00640  ▭ bFN = FALSE
00641  ▭ eCOT = eIEC870_COT_SPONTAN
00642  ▭ nORG = 1
00643  ▭ asduAddr = 162
00644  ▭ eClass = eIEC870_Class_1
00645  ▭ info
00646  ▭ cfg
00647  ▭ sts
00648  ▭ AODB[38]
00649  ▭ aObj
00650  ▭ aObj
00651  ▭ head
00652  ▭ ident
00653  ▭ eType = M.SP_TB_1
00654  ▭ bSQ = FALSE
00655  ▭ nObj = 1
00656  ▭ bT = FALSE
00657  ▭ bFN = FALSE
00658  ▭ eCOT = eIEC870_COT_SPONTAN
00659  ▭ nORG = 1
00660  ▭ asduAddr = 162
00661  ▭ eClass = eIEC870_Class_1
00662  ▭ info
00663  ▭ cfg
00664  ▭ sts
00665  ▭ AODB[39]
00666  ▭ aObj
00667  ▭ aObj
00668  ▭ head
00669  ▭ ident
00670  ▭ eType = M.SP_TB_1
00671  ▭ bSQ = FALSE
00672  ▭ nObj = 1
00673  ▭ bT = FALSE
00674  ▭ bFN = FALSE
00675  ▭ eCOT = eIEC870_COT_SPONTAN
00676  ▭ nORG = 1
00677  ▭ asduAddr = 162
00678  ▭ eClass = eIEC870_Class_1
00679  ▭ info
00680  ▭ cfg
00681  ▭ sts
00682  ▭ AODB[40]
00683  ▭ aObj
00684  ▭ aObj
00685  ▭ head
00686  ▭ ident
00687  ▭ eType = M.SP_TB_1
00688  ▭ bSQ = FALSE
00689  ▭ nObj = 1
00690  ▭ bT = FALSE
00691  ▭ bFN = FALSE
00692  ▭ eCOT = eIEC870_COT_SPONTAN
00693  ▭ nORG = 1
00694  ▭ asduAddr = 162
00695  ▭ eClass = eIEC870_Class_1
00696  ▭ info
00697  ▭ cfg
00698  ▭ sts
00699  ▭ AODB[41]
00700  ▭ aObj
00701  ▭ aObj
00702  ▭ head
00703  ▭ ident
00704  ▭ eType = M.SP_TB_1
00705  ▭ bSQ = FALSE
00706  ▭ nObj = 1
00707  ▭ bT = FALSE
00708  ▭ bFN = FALSE
00709  ▭ eCOT = eIEC870_COT_SPONTAN
00710  ▭ nORG = 1
00711  ▭ asduAddr = 162
00712  ▭ eClass = eIEC870_Class_1
00713  ▭ info
00714  ▭ cfg
00715  ▭ sts
00716  ▭ AODB[42]
00717  ▭ aObj
00718  ▭ aObj
00719  ▭ head
00720  ▭ ident
00721  ▭ eType = M.SP_TB_1
00722  ▭ bSQ = FALSE
00723  ▭ nObj = 1
00724  ▭ bT = FALSE
00725  ▭ bFN = FALSE
00726  ▭ eCOT = eIEC870_COT_SPONTAN
00727  ▭ nORG = 1
00728  ▭ asduAddr = 162
00729  ▭ eClass = eIEC870_Class_1
00730  ▭ info
00731  ▭ cfg
00732  ▭ sts
00733  ▭ AODB[43]
00734  ▭ aObj
00735  ▭ aObj
00736  ▭ head
00737  ▭ ident
00738  ▭ eType = M.SP_TB_1
00739  ▭ bSQ = FALSE
00740  ▭ nObj = 1
00741  ▭ bT = FALSE
00742  ▭ bFN = FALSE
00743  ▭ eCOT = eIEC870_COT_SPONTAN
00744  ▭ nORG = 1
00745  ▭ asduAddr = 162
00746  ▭ eClass = eIEC870_Class_1
00747  ▭ info
00748  ▭ cfg
00749  ▭ sts
00750  ▭ AODB[44]
00751  ▭ aObj
00752  ▭ aObj
00753  ▭ head
00754  ▭ ident
00755  ▭ eType = M.SP_TB_1
00756  ▭ bSQ = FALSE
00757  ▭ nObj = 1
00758  ▭ bT = FALSE
00759  ▭ bFN = FALSE
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00761  ▭ nORG = 1
00762  ▭ asduAddr = 162
00763  ▭ eClass = eIEC870_Class_1
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00765  ▭ cfg
00766  ▭ sts
00767  ▭ AODB[45]
00768  ▭ aObj
00769  ▭ aObj
00770  ▭ head
00771  ▭ ident
00772  ▭ eType = M.SP_TB_1
00773  ▭ bSQ = FALSE
00774  ▭ nObj = 1
00775  ▭ bT = FALSE
00776  ▭ bFN = FALSE
00777  ▭ eCOT = eIEC870_COT_SPONTAN
00778  ▭ nORG = 1
00779  ▭ asduAddr = 162
00780  ▭ eClass = eIEC870_Class_1
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00782  ▭ cfg
00783  ▭ sts
00784  ▭ AODB[46]
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00786  ▭ aObj
00787  ▭ head
00788  ▭ ident
00789  ▭ eType = M.SP_TB_1
00790  ▭ bSQ = FALSE
00791  ▭ nObj = 1
00792  ▭ bT = FALSE
00793  ▭ bFN = FALSE
00794  ▭ eCOT = eIEC870_COT_SPONTAN
00795  ▭ nORG = 1
00796  ▭ asduAddr = 162
00797  ▭ eClass = eIEC870_Class_1
00798  ▭ info
00799  ▭ cfg
00800  ▭ sts
00801  ▭ AODB[47]
00802  ▭ aObj
00803  ▭ aObj
00804  ▭ head
00805  ▭ ident
00806  ▭ eType = M.SP_TB_1
00807  ▭ bSQ = FALSE
00808  ▭ nObj = 1
00809  ▭ bT = FALSE
00810  ▭ bFN = FALSE
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00812  ▭ nORG = 1
00813  ▭ asduAddr = 162
00814  ▭ eClass = eIEC870_Class_1
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00816  ▭ cfg
00817  ▭ sts
00818  ▭ AODB[48]
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00820  ▭ aObj
00821  ▭ head
00822  ▭ ident
00823  ▭ eType = M.SP_TB_1
00824  ▭ bSQ = FALSE
00825  ▭ nObj = 1
00826  ▭ bT = FALSE
00827  ▭ bFN = FALSE
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00829  ▭ nORG = 1
00830  ▭ asduAddr = 162
00831  ▭ eClass = eIEC870_Class_1
00832  ▭ info
00833  ▭ cfg
00834  ▭ sts
00835  ▭ AODB[49]
00836  ▭ aObj
00837  ▭ aObj
00838  ▭ head
00839  ▭ ident
00840  ▭ eType = M.SP_TB_1
00841  ▭ bSQ = FALSE
00842  ▭ nObj = 1
00843  ▭ bT = FALSE
00844  ▭ bFN = FALSE
00845  ▭ eCOT = eIEC870_COT_SPONTAN
00846  ▭ nORG = 1
00847  ▭ asduAddr = 162
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00850  ▭ cfg
00851  ▭ sts
00852  ▭ AODB[50]
00853  ▭ aObj
00854  ▭ aObj
00855  ▭ head
00856  ▭ ident
00857  ▭ eType = M.SP_TB_1
00858  ▭ bSQ = FALSE
00859  ▭ nObj = 1
00860  ▭ bT = FALSE
00861  ▭ bFN = FALSE
00862  ▭ eCOT = eIEC870_COT_SPONTAN
00863  ▭ nORG = 1
00864  ▭ asduAddr = 162
00865  ▭ eClass = eIEC870_Class_1
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00867  ▭ cfg
00868  ▭ sts
00869  ▭ AODB[51]
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00872  ▭ head
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00877  ▭ bT = FALSE
00878  ▭ bFN = FALSE
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00881  ▭ asduAddr = 162
00882  ▭ eClass =
```

Wasserwerk Konstanz



Arquitetura de Controle/Estrutura

IPC

- 2 C6925 control cabinet Industrial PCs with Celeron® M 1.0 GHz, Windows CE
- 6 Control Panels
- 7 CX9001 Embedded PCs

I/O

- 15 BK9050 Modbus TCP Bus Couplers
- digital and analog Bus Terminal I/Os

Automation

- TwinCAT PLC
- TwinCAT library for communication via the telecontrol protocol according to IEC 60870-5-104



Wasserwerk Konstanz

Vantagens para o cliente:

- enhanced convenience for monitoring, operation and documentation of production data
- Openness of the system enables future modifications or extensions.
- No manufacturer-specific dependencies when it comes to selecting the hardware.
- versatile interfacing of subsystems
- integrated I/O system based on Beckhoff Bus Terminals
- straightforward integration of measuring systems, e.g. via Modbus TCP
- control retrofit during operation
- simple operation via Control Panel with touch screen interface
- option of remote maintenance and control via telecontrol protocol IEC 60870-5-104

Project realization

- Wasserwerk Konstanz/Cegelec AAT Region Süd

Tratamento de Água | Meschede, Alemanha

HST Hydro-Systemtechnik GmbH



Tratamento de Água | Meschede, Alemanha

HST Hydro-Systemtechnik GmbH

IPC

- Panel PC CP7102,
IP 65,
15-inch touch screen

I/O

- Lightbus Bus
Terminal Controller
- measurement
terminals
- Wireless terminal
module KM6551
- Lightbus PCI Inter-
face Card FC2001

Automation

- TwinCAT PLC
- TwinCAT ADS



Design, installation and commissioning of a new process control system for automation of the drinking water production from the Genkeltalsperre reservoir

- monitoring of withdrawal of water, water level, water temperature, water evaporation and wind speed
- Process control system links twelve local stations.



Concluido: 2010 | Cliente Beckhoff desde: 2003



Arquitetura de Controle/Estrutura

IPC

- Panel PC CP7102, protection class IP 65, 15-inch touchscreen

I/O

- Lightbus Bus Terminal Controller with
- analog and digital measurement terminals
- Wireless terminal module KM6551
- Lightbus PCI Interface Card FC2001

Automation

- TwinCAT PLC
- TwinCAT ADS



Vantagens para o cliente:

- reliable connection between the distributed stations via a 1.5 km Lightbus ring
- seamless connection of a "measuring raft" on the water via the wireless KM6551 terminal module from Beckhoff
- high availability and reliability of the Beckhoff hardware components, even under harsh and damp conditions
- safe data management via the Lightbus system

Project realization

- Aggerverband/HST Hydro-Systemtechnik/Beckhoff

Tratamento de Água | Plauen, Alemanha

Zweckverband Wasser und Abwasser Vogtland



Zweckverband Wasser und Abwasser Vogtland

IPC

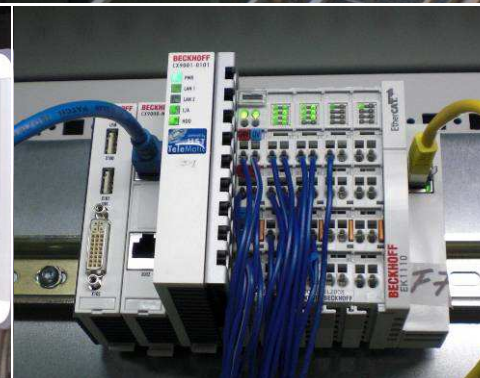
- Control cabinet PC C6335-0040
- 15-inch „Economy“ built-in Control Panel CP69xx
- Embedded PC CX9010

I/O

- EtherCAT Coupler EK1100 with
- EtherCAT Terminals

Automation

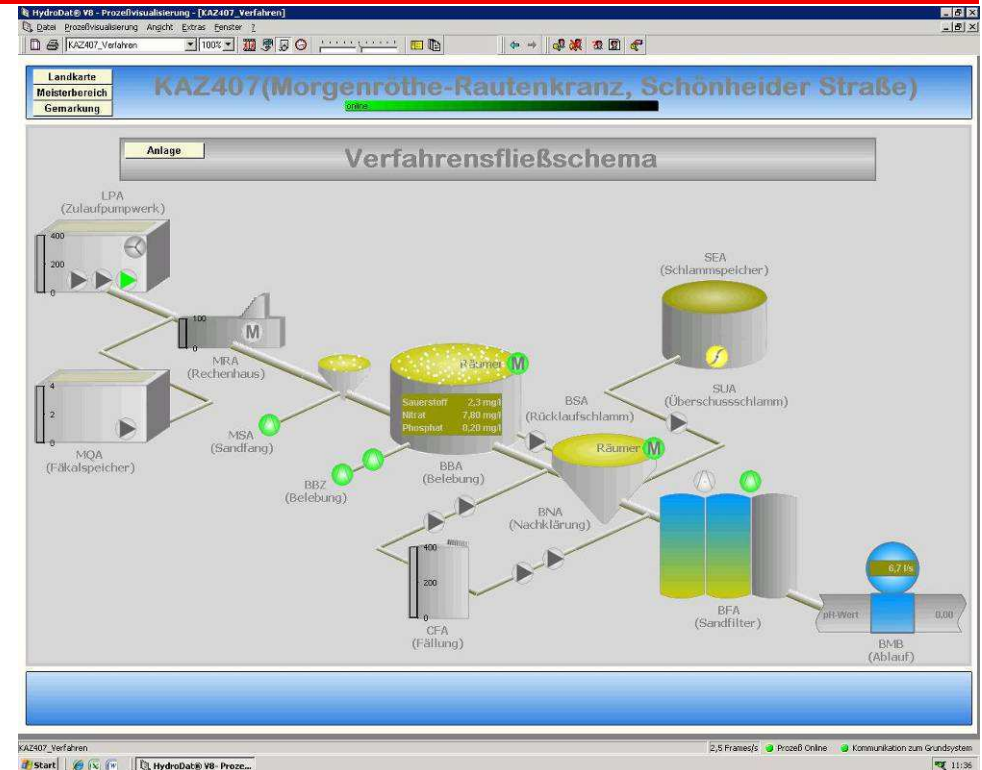
- TwinCAT PLC
- TwinCAT ADS



Zweckverband Wasser und Abwasser Vogtland

Retrofit of the outdated switchgear and automation equipment at the Morgenröthe-Rautenkranz wastewater treatment plant

- implementation during plant operation
- standardization of the software and hardware for ensuring reusability with further plants



Concluido: 2009 | Cliente Beckhoff desde: 2008



Arquitetura de Controle/Estrutura

IPC

- Control cabinet PC C6335-0040
- 15-inch „Economy“ built-in Control Panel CP69xx with touch screen
- 4 Embedded PCs CX9010

I/O

- EtherCAT Coupler EK1100 with
- EtherCAT Terminals

Automation

- TwinCAT PLC
- TwinCAT ADS



Zweckverband Wasser und Abwasser Vogtland

Vantagens para o cliente:

- simplified plant handling by standardization of the control structure and visualization
- Due to the 'readability' of the software, the plant user can rectify malfunctions itself.
- high recognition value of the user interface
- Two Control Panels allow the parallel visualization of the plant in the control room and in the field.
- Compact control technology enables a reduction of the number of control cabinets.

Tratamento de Água | Heddesheim, Alemanha

IFA mbH



IFA mbH

IPC

- Embedded PC
CX1000

I/O

- Ethernet/Modbus,
RS232/RS485
- Bus Coupler BK73x0,
BK8x00 with Bus
Terminals

Automation

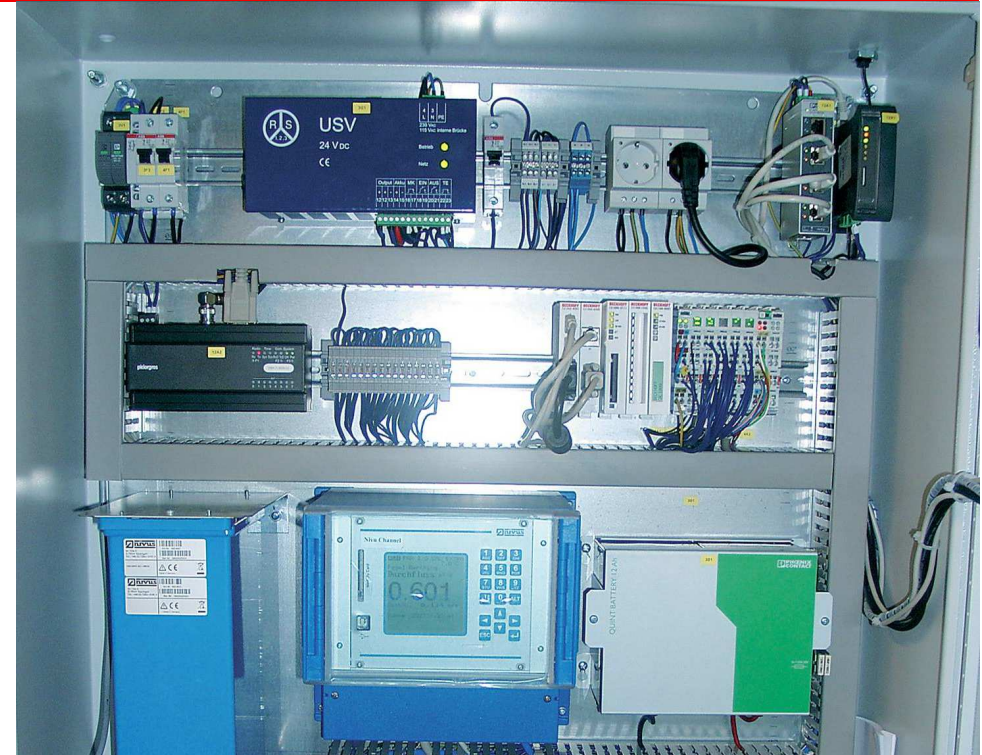
- TwinCAT PLC



IFA mbH

Recording and transmission of water level and flow rate data at the Sulz Berching measuring station

- The values for level and flow rate are collected, compared and stored by an Embedded PC.
- transmission of the data via wireless modem and Modbus protocol to the sluice



Concluido: 2008 | Cliente Beckhoff desde: 2002

Arquitetura de Controle/Estrutura

IPC

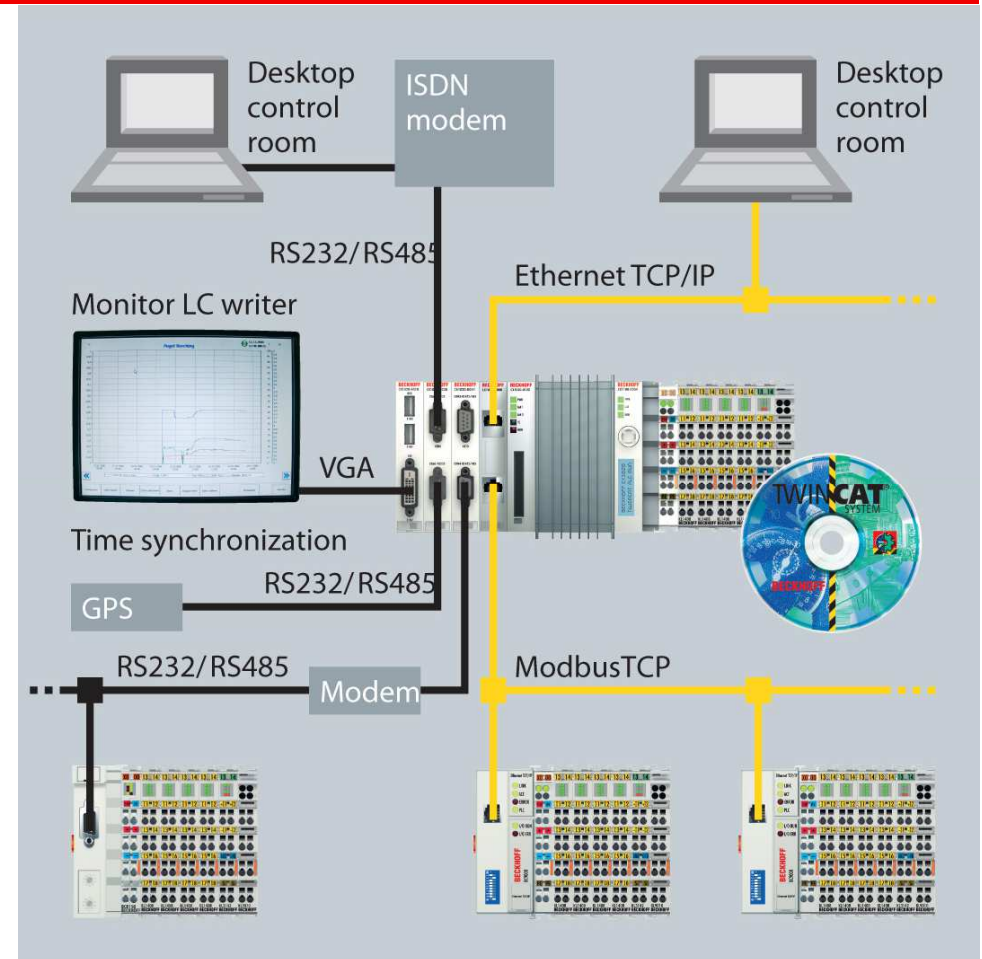
- Embedded PC CX1000 with Ethernet interface (BS: Windows CE)

I/O

- EthernetTCP/IP, Modbus TCP, RS232/RS485
- Bus Coupler BK73x0, BK8x00 with
- Bus Terminals

Automation

- TwinCAT PLC



Vantagens para o cliente:

- The application of general standards enables integrated communication.
- inexpensive and permanently available solution
- no special development necessary
- Bus Terminal stations collect the measurement data and transmit them via Modbus TCP to the Embedded PC.
- integration of arbitrary fieldbus systems possible



- Vários sistemas utilizando pequenas CPUs Beckhoff para:
 - Controle de Comportas
 - Sistemas de Filtros
 - Monitoração da Planta e Tratamento de água



Obrigado pela atenção e entre em contato conosco:

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