##### aJpina2

###### DECLARE FUNCTION Ace rta S cxx ! DECLARE SUB ALTAGUA (g

D EC LA R E SU B AR EAMIN É

D EC LARE SU B AR ENTRADA Ę g D EC LAR E S U B AR SA I DA (

DE C LAR E S U B CA LCU LA8 9 EMž' ( Û D ECLAR E SU B CALCU LATORR E ( D ECLARE SU B CALC U LAVAP ( ) DE CLAPE SUB DADOSMOD E LO g

DECLARE FUNcTIoN Den s á d ade ! ( L9 ! , L 6 ! , P7 !

D ECLARE SUB ENCHI MENTO (} OECLARE SUB ENCHOlt {Ş

DEC LARE FUNCTION Ental p1 a ! ¢ L 9 ! , L 3 ! DECLARE SUB LEDADOS §}

D ECLA R E SUB L ETOR R E {} D ECLAR E S U B L EVA P ( g

D ECLA R E S U B M ER KEL ENCH Ê ğ D ECLAR E S UB MER K EL PRO {§ DEC LARE SU B CODZIN g

D ECLA R E SUB NCNÌ ZN

0 ECLARE FUNCTION P r e set m ! ¢E 2 0 ! D ECLA R E SU B PRES EST ¢)

D ECLAR E FUNCTION P *r* e s Pa rvap ! ( P4



D ECLAR E FUNCTI oN P *r* e svap s a t ! C P8 D EC LA R E S U B PROP A R (

UE C LA R E S U B S AI FIC HA (g

DEC LA RE SUB +emBs L L8 ! , L 7 ! , L 6 ! DEC LARE S UB TemBU ( L9 ! , L 7 ! , L 6 ! DECÌ.AR E SU B TEL PM $Ş

u9 ! , I.8 ! , L6 !

DEC LARE FUNC+ION Teo rAg ua ! ( P 7 ! , L 6 ! ) D EC LARE SUB TOL {}

DECLARE FUNCTION UR ! (P3 ! , 7 !

D ECLARE S UB U SUA L ()

D EC L,ARE S UB VEN\*I LADOR {) D EC LARE S UB *E ES* ENHA {}

UEC LARE SU B ca1 c u1 acs (}

D EC LARE SUB nos t ra En cont rado (}

###### ' %F0RM Imprime

’ S FORN mo st ra

’ S PORM Ent ra00l ’ $ FORM be rt u ra

S FORM No st ra0

’ $ FORM f rmH el pua1n

' S "ORM I rn1H el put 11 s SINCLUDE: 'selecao.bi @INCLUDE: help.bi

' SINCLUDE : ' con s t an t . b1 '

' CHDRIV E "g : ”

’ CHOIR " g : ENGG PROGRAMAN PAD‹JOS ”

' R E DZM V8 E 3 ( 26, 66) AS SING i . E , v9 E TO 26, 60Ï AS SINGLE , V9E 8 ( 2 l , 3? s S c L r . V9E § ( 18 , 60J AS SI NGLE

Ł7IN \‘A P Ț2 , d AS SING L E

l3 i f/ F.NC L ó) AS SI NGL E

DI II ,\A I ( 7 , 2 AS SING L E , 4S SINGL E ’ LETORR E

###### UT Y S 2 5 , 2 TJ AS S Z NGL E DIM T 2 5, 2 7 AS STRING

D Nì SHA R ED N CM Ž Ș , Ț )

###### \*i Jenum = S

AA 3 6 , 4 AS S ING LE , AA 4 T 2 , 4 3 ) A ? S I NG L E , PI Lß? Ę I› 7



INPUT #f4 lenum%, num%

SCk E EN . co nt rod Pan e1 ¢ T%} - n urns

##### Pńg1r a 1

###### alpina2

S E LECT CASE I%

###### CAS E 9

Fundo 3 an e1 a = n urr%

CASE 10

#### FrenteJanela = num%

END 5ELECT

NEXT I%

##### CLOSE fi]enum%

He1 pReg i s te r "aj uda .EXT " , He1 pLoaded% I F He1 pLoa ded% = FALSE THEN

Ent ra001. cmdAj uda . Enab1 ed = 0

#### HelpSetOptions Fundolanela, Frentelanela, Fundolane4a, FrenteJanela, FundoJanela, 11, 6S

END I F

###### ’ CONST TRUE = — 1 CONST NUf4TOR = 2 5

CONST PI = 3 . 14J 5 9

###### CONST DE S VIOSUP = 2 CONST DESVIOINF = - 1. 5 CONST PRA FORA = — 1

DES ENV = 0 LIMITECHUVA = 2l LIMITECHUVAINF =

LES ENHA

Ab e *rt* ura . SHou

L E DADOS

En t ra% = $

###### STATIC FUNCTION Ace rta $ (xxv

X = INT (Xx \* 10 + . 1) / 10

+emp 8 = sTR S (x}

Temp S - LTRIM$ (Temp S} Temp $ = RTRIM$ CTemp S}

###### X - INSTR(I, Temp$, ".")

I F {X = 0) AND ( L EN (Telf S < 5 ) TH EN

Temp S = Temp $ •

END I F

IF (INSTR(1, Temp$, ”. ”) = 1) THEN

##### Temp% - "0" rempB

ELSEIF (INSTR(1, Temp$ , " — . " = 1J THEN

###### Valor = LEN(Temp$)

Temp $ = " — 0. " • NIID $ (Temp S 3 Va I o r 2

END I F ' '

Ac e rua $ - Temp$

END

SUB

FUNCTION

ALTAGUA (g

H0 - 0

S E LECT CASE S(M , 17 CAS E 1

###### I3 - 1

DO

###### IE AA1(I3, 1) = S(M, 1) CHEN HO = AAI(I3, 2j

EXIT DO E ND I F

*Z F* H O <> O TI-|E N

EXIT DO

END I F

1 3 - 1 3 + 1

##### LOOP

IF H0 = 0 THEN

PRINT ” ERRO NA D ET E REI INACAO DA ALTU RA DE ENTRADA DE AGUA"

PRINT " {CASEU "

##### Pág n a 2

STOP

END I F

CAS E 3

#### I3 = 1

##### DO

at pJ na2

I F AA3 13 , 1) — S {N , 1) THEN

HO = AA3(13, 6 - E13) EXIT DO

END I F

I F H0 <> 0 THEN EX IT DO

END I F

13 = 13 + 1

LOOP

*z T* H0 = 0 TH EN

PRINT "ERRO NA DET E RR I NACAO DA A LTURA DE E NTRADA DE AGUA " PRINT " {CASE3 "

STOP

END IF CASE 4

I3 = l

I F ( ENCH = "A19" ) OR ( ENCH = "A 12 " } TH EN

##### NC0 = 5

E L S E I F ENCH = " SG " OR ( ENCH = " > 20 " } TH EN

NC0 — 0

E L S E

##### NC0 10

END I F

DO

I F AA4 13 , IQ = 5 {M , 1} THE N

IF ENCH <> "RT" THEN

H0 = AA4 {I 3 , NC0 + NC \* 1 14 \* (4 — E 13 E L SE

H0 — AA4 ( 13 , NC0 • NC 14 / 4 2 • T4 ’ {8

LOOP

E ND I F

EXIT DO

END I F

I F H0 <> 0 TH EN EXIT DO

END I F

13 = I3 1

I F H0 = 0 THEN

PRI NT " ERRO NA PRINT " {CASE4 " STOP

END I F

DETERMINACAO DA A LTURA DE ENTRADA DE AGUA ’ ’

##### " \*\* Altura dos Pilaretes

I \* S {Y , 18) = 2 THEN

I F ( ( EN C H = " S G " ) OR E N CH = " >2 0 ” A ND N C = 5 TH E N



E L S E

NC Pi l — 0

END Z F

#### Z 3 = 1

DO

IF PILAR(I3, 1) - S(M, 1) THEN

PILARETE : PILAR(I), 3 ' NCPil (4 - El3j l}



PILAR(I3, 6 - E13))

END I F

###### I K Ent ra00T . Opt Ba cJ c (2 . va 1 ue - TRUE THEN

PI LARETE = PI LARETE + 1 . 3 5

EN 0 I F

EXIT DO

###### Pâg na 3

LOOP

###### END I F

END IF

I3 = I3 1

#### aJp4na2

’ ” \* " COR R ECAO DA ALTURA PARA O CASO DE TORRE TI PO — B E — "

###### I F S (M , 18a = 2 ANO Ent *ra* 001. Opt Ba c a (2 . Va1ue = TRUE THEN H 0 = H0 • . 3

END I F

CAS E EL S E

PRINT " ERR0 NA D ETERMINA CAO DA A LTURA DE ENT RADA DE AGUA "

PRINT " (CAS E 5) “ STOP

END S EL ECT

END SUB

SU B AR EAMIN ( )

' CALCU LA A AR EA NINI LA POR C ELU LA

'VARIAvEIS DE ENTRADA: E1=VAZAO DE AGUA TOTAL

' E T §=NUN!E RO D E CE LULAS

SELECT CAS E ENCH

###### CASE "A19"

AFÍN = E1 / EL § / LI MI T ECHUVA

###### CMIN = l

CMAX *—— S*

CAS E

CAS E

" >20 " CMIN = l CMAX = 5

###### AMIN = E1 / El5 / LIMITECHUvA "SG"

CMIN : 1

CAS E

CAS E

CMAX = 5

###### AMIN = El / E15 / LIMITECHUvA

"RT"

###### CMIN - 1

CNAX - 3

AMIN = El / £1Ş / LIMITECHUvA

"A 12 "

###### CMIN = 2

CN!AX = S

ALI N = E1 / E15 / L I MI TECHUVA

END

S U B

END S E LECT

SUB

END

AR ENTRADA )

##### IF E6 — 0 THEN

TemBs E8 , E 7, E9 E6 = L 9

##### E LSEZ F E8 = 0 THEN TemBU E6, E 7, E9 E8 = L8

END IF n9 = E6 L8 = E8 L6 - E9 L5 = E20 PROPAR E6 = L9 E8 = L8 E7 - L7

###### n9 - c6

Hl = u4 El = L3 R1 = L2 SUB

###### 'PROPRIEDADES DO AR NA ENTRADA

TBS TB U UR

PR ES SAO A^MOS FE RICA

ENTALPIA

’ TEOR D E AGUA DEN SI DAD E

SUB AR SA I DA ( )

’ D ET E RMI N A AS PRO PRI EDADE S DO AR NA SAI DA E CA LCU LA LAN BDA

##### Pág ' n a 4

alplna2

'CALCULO ITERATIVO DA DENSIDADE NEDIA DO AR

R3 = R1 'ADMITE-SE DENSIDADE SAIDA=DENS. ENTRADA 'DO

L = Vaz ° R3 / (G0 / 3.6J 'LAMBDA ESTIMADO COM BASE EM R3

##### H2 = H1 + E4 \* 4.1868 / L 'ENTAIPIA DO AR NA SAIDA, CORRESPONDENTE

K9 = H2

###### L 8 = E 8

TEM P 1

L9 = K8 L8 = K8 PRO PAR

R 2 = L 2

R 4 = ( RI + R 2 / 2

###### Tl = E3

TBS DO AR NA SAIDA ' TBU DO AR NA SAIDA

' D EN SI DAD E N!EDIA DO AR



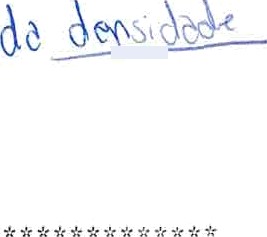
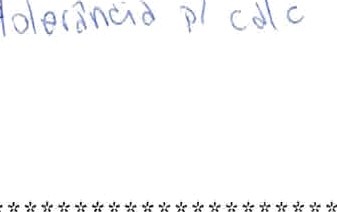
END

SUB

###### Re vJ s ao : 2

De s c rJ cao : Ret1 ra da a conde cf on al da ne c e s s1 da de da d fe ren ca en t re

##### den sl dades



PO *r :* C3 M Data : 16 . 12 . 94

’ I F (AB S (R 3 - R4} >= . 0001} +HEN —\*"

R 3 — R4

’ EXIT DO

’ E ND I F

#### ’ ml e *r* c asr sa da = — 1

' EXIT DO

,' LOO.P. . ..,. . . . .,,. ,. . , . „ , . .,,. .,.. ,. ,

SUB

###### CALCULA89EM2 ()

'Alerta = 0

' REvel ho = RE

ANvelho = AN

###### A]ertaventilador = 0

AL = 3.14159 / 4 \* (S(M, 7) ^ 2 - (S(M, 7) - 2 ' S(M, 8)) ^ 2) 'AREA LIVRE

#### s = (v5 / AL) \* 2 ' R5 / 2 / 9.807 / D4 'SIGMA

###### UA = ROTVEN / 60 \* 3.14159 ’ S(M, 7) 'VELOCIDADE PERIFERICA

F : V§ / AL / UA 'PHI

###### PSI = F 2 / S 'PSI=PHI^2/SIGMA PSI1 = INT((PSI0 - PSI) / ABS(DPSI)) + 1

'PSI1 = INT(ABS(PSIO - PSI) / ABS(DPSIj) + 1 PSA = PSIO + (PSI1 - 1) " DPSI

PS B = PSA + D PSI

FI2 = I NT F — PHIOF / DPH13 + 1)

I F FI2 < 1 OR 2 “ FI2 + 2 > N?OL OR PSI I < 1 OR PSI 1 + 1 > NLIN TH EN RE1 - 0

E L S E

|  |  |  |  |
| --- | --- | --- | --- |
| FI 2  FI2 | — 1) |  | |
| 2 ’ | FI2 | — | 1J |
| 2 | KI 2 |  |  |
| KI 2 | + T) |  |  |
| FI 2 | + 2) |  |  |
| 2 “ | FIO |  | 1) |
| 2 “ | FI 2 | + | 2 |

R E1 V PSI 1 , 2 " AN T V Ç PSI1, 2 " RE2 V PSI1 • 1 , AN 2 V P 511 \* 1 , RE 3 V P S 1 1. , ? ”’

AN 3 V PS 1 1 , ? “” RE4 V ( PSI 1 + 1, AN4 V PS T1 • 1 ,

RE 5 RE 1 — RE 2) “ A BS ( PSI - PS B} / DPSI + V ( PS 11 1, 2 “ 1 2

R E 6 R E 3 R E 4 ’ A BS Ç P SI P S B§ / UF’3I V PS I I \* 1 , 2 z 7

1)

A N 5 (ANI AN 2 AB S Ç PS I PS B} / DPS I) V PS I T + 1 , 2 FI 2 AN 6 (AN 3 — AN4} AB S C Ê PS I PS B / DPS I } V PS I I + I , 2 P I ? •

END IF

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| RE | = ( RE6 | R E § | K | PHI0 • ( Fi 2 | 1} | D PHI) | / DPHI R E 5 |
| AN | — JAN 6 | AN 5) | Ç F | PH10 + ( FI 2 | 1) | OPHI | / D PHI \* AN § |

Pãgina S

I F RE 0 THEN RE = 'i0

#### alplna2

IF {RE1 = 0 OR RE2 = 0 OR RE3 = 0 OR RE4 = 0) THEN

if (w ‹> 2.25) And (W <> 2.8J rhen

### ' RE = REVelho

#### ' AN = ANVelho

AlertaVentilador = -1

### ' Re vi sao : 1

' Des c r1 cao : B1oco que t rata *e c ro* po r pon to fo ra do gráfl co

Por : CJM Data : 21.11.94

### Copiado da versao da MIDWEST em 05.12.94

IF Pr1mvezFo ra = 0 THEN

###### PMI nE = 0 : Pmi nD = 0 : Fmi nB = 0: Fm1 nC = 0

FOR I = 1 TO NLIN

OF Pms nE = 0 AND V (I , 1) <> 0 THEN P«ri nE = I

IF Pmi nD = 0 AND V(NLIN — I + 1, NCOL - 1) <> 0 WHEN Pm1 no =

NLIN I + 1

Z F PIti1 nE <> 0 AND Pm1 nD <> 0 THEN EXIT FOR

NEXT I

FOR 3 = 1 TO NCOL / 2

IF Fmi nC = 0 AND V {1, 2 “ 3 • 1} <> 0 THEN Fm1 nc = 3

#### IF Fmi nB = 0 AND V(NLIN , 2 \* - 1) <> 0 THEN Fmi nB = 3

##### IF Fminc <› 0 AND FminB <> 0 THEN EXIT FOR

NEKT 3

## Pré mvezFo ra = - 1



ELS E

### IF SegVezFora = 0 THEN

segVez Ko ra = - 1

### RE = 60

ELSEIF Te rVezFo ra = 0 THEN

TerVez Fo ra = — 1 RE = 45

ELSEI F quavez Fo ra = 0 THEN

##### QuaVez Fo ra = - 1 RE = 40

ELS W F Qu a Vez Fo ra = 0 THEN

qu1vezFora = — 1

##### RE = 5 5

ELSE

#### msgs = ” Nao houve conv e rgenc1a no grafl co do vento 1ado r para

encontrar um ponto no grafico onde a potencia consumida esta 10 % abaixo da

#### potencia de placa do motor”

##### Nodel o1$ = "To r re Nodel o : " + MODELO

Z F PSI1 <= Pmá n E AND FI2 <= Fm1nC THEN

ms g1$ = " A pe rda de pres s ao es tate ca total e mu to a1ta ou a vazao de ar e muito baixa (srande Psi). Experimente diminuir a area livre do ventilador.

ELS EI F PSI I <- Pm1 nD AND FI2 >= Fm1 nC THEN

### msgll = " O angulo da pas e muito alto (Grande Phi).

#### Experimente usar um ventilador com mais pas or aumente a rotacao do mesmo.

ELSEIF PSI1 ›= PminE AND FI2 ‹= FminB THEN

### Expe r1 rrente

#### oesmo .

msgll = ” O angulo das pas e muito baixo (Pequeno Phi)

#### um ventilador com menor numero de pas or diminua a rotacao do

E LS EZ F PSI1 >= Pm1 no AND FZ2 >= Fm1 nB THEN

msg1$ = " o rend vento do vent1l ado r e mu1 t o bai xo

#### ( Pequeno Ps1) . Experl mente aumenta r a area 1 1 vre do venta 1 ador . "

END I F

ZK A1 gunna Vez Den t ro = 0 TH EL

IF U1 t 1 rnON\/ < MOT / 1. 1 THEN

##### Novouode 1 o = - I

L = UltimoL w = ultimoW RE = U1 tJ moRE AN = U1 t1 JOAN

NF = UltimONU

#### Pâg; na 6

##### al pJ na2

V 5 = UI t á m0V 5

D4 = UltimoD4 Rl = UltimoRS

#### msgs = msg$ \* " Assim, usaremos o ultimo ponto que esta dentro do grafico. ” i msgl$

###### 'Ir Terminando% = 0 THEN PRINT (msg%), 48, ModelolS

ELSE

###### No v ovode1o = —2

ms g S = ms gS + " O u1 t mo pon t o que e s t a dent ro do

grafico apresenta uma potencia consumida maior que o aceitavel.” + msgl$

' I F se rmj n ando% - 0 +HEN PR I N+ (ms g $) , 48, rod et o I S

END I F

E L S E

NovoModelo - —2

#### msg% = msg$ + msgl%

##### IF Terminando% = 0 THEN PRINT (msglJ, 48, YodeJolS

###### ELSE

END I F END I F

END I F

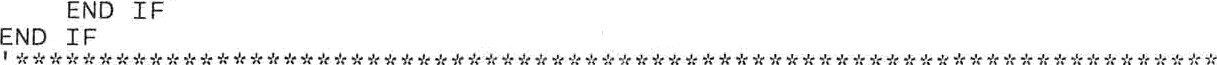
IF UltimoNV r MOT / 1. 1 OR Ul timoNV < v5 \* D4 / 7S / RE / ET " 100 THEN

UJtimoW = W Ul timOL = L UltimoRE = RE UltímOAN = AN

###### UltimONV = V5 \* D4 / 7S / RE / ET " 100

ultjmOV§ = V5 Ult4mOD4 = D4 U4timORS = RS

##### AlgumavezOentro 0



END SUB

5 U B CA L CULATOR RE (

’ VAR IAVE Z S QUE USA : E9=

#### ’ H0=

' ENCH=

#### E13=

##### F1—

###### ' R1=

R2=

###### R3=

’ R4=

' TOT=

' +T=

K8=

### vaz—

N = E10

WAu tü 9° = \*

##### Vaz = S(M, 3) w

C ?LU LA

DADOS COD E LO

AR ENTRADA

r nvez Fo ra = 0 segvez Fo ra = 0 Te rve z Ko na — 0 qu ave z no ra — 0 Qu1 vez Fo ra = 0

###### ml guma ve zDent do = — I NovoMod eI o = 0

13 = E18 1

' VE LOCI DA D E M EDI A DO A R NA \*tJPII E L i›\, )

'VAZAO VOLUMETRICA MEDIA DE AR POD

###### 'DETERMINA DADOS CONSTRUTIVOS NODELO

' PROPRI EDAD ES DO AR NA ENT RADA

IF T(M, I3j = ”8EM2” OR T(N, 13) ”9EM2” \*HEN

###### ArquivolB = arquivos

Pág1na 7



a rqu vo S = T (M , 13 + LTRIM$ ( STR$ {N PÇ ) + " . DAT"

IF A rqul vo1$ <> arqu voS THEN OPEN ”I " , # S , a rqu i vo S

IN PUT 4 5 , NLI N , NCOL , PSI0 , OPS I , PH 10 , DPH I

REDIM V(N L I N , NCOL} AS SING L E FOR I3 = 1 TO hl LI N

FOR J = I TO NCOL

I NPUT # 5 , V ( 13 , 1 )

NEXT 3

NEXT 13 CLOS E #5

END I F

END I F

ch 1 co = 0

##### OO

C E L U LA

ch co = ch1 co • 1

I F Ch1 co > 1 THEN Ca1 c u aNS

Va z = S (M , 3) \*' N

'vAZAO VOLUMETRICA MEDIA DE AR POR

U1 = Vaz / F 1



##### I e rtaAr Sal da - 0

I F N <> 0 THEN AR SAIDA

’ VE LOCIDADE M EDI A DO AR NA ENTRADA DA TORRE

'PROPRIEDADES DO AR NA

SAI DA/ LAMBDA

END I F

I F FAI e *rt* aA rsal da — - 1) THEN

##### ' PRINT (" E r ro no a *r* de s a1 da ") , 48, PodeI o1S

EXIT S UB

END I F

##### I F S (M , 2) = 1 THEN

RS = R1

'DENSIDADE DO AR NO VEN\*lLAOOR

E L S E

R 5 = R 2

END IF

PR E S EST

V $ - Vaz " R 4 / R 5

VENTILADOR

' P E RDA D E P R E S SAO E S +ATICA NA TORRE

IF (T(M, 13) = ”VAP”) OR (T(M, I3) = ”VAL”) THEN

##### IF ABS((SD 04) / D4) <= .001 AND (Alertaventi lador = O) THEN

EXIT DO

E LS E I F No v ovo de 1 o = —2 TH EN

##### 'print (”Falta de convergencia no vent4lador”),48,xodelolS

EXIT SUB

END IF

TH EN

E L S E

IF §ABS (1 ( (TOT / 1. 1} / NV§ <= . 003) UND A1 er t avent 1 ach *r* U

EXIT DO

###### ELSEIF NovoMoclelo = -1 THEN

EXI\* DO

ELSEIF NovoModelo = -Z THEN

###### ' p r nt ( " Fa1 a de con ve rg en cf a no vent 1 ad o “ ’ ' ) , d 9, Moll e1 o:! î

EXIT S UB

ELS EI \* f Ch CO > 2 O§ THEN

###### ’ PRINT ( " Nao con segu u conve rg1 r . Loo p t po n de t e ï» na rJo ‘

EXIT SUB

END I F

EN0 I F

LOOP

M E RK E L PRO ME Rlt E L E NCH

D9 — AB S K - K 3

D - K \* 100 / L <0 ‘ L A 5

TOL

#### FJ s ca0 = u7

###### I P L 1 e rt axe r ken P *ro* — - 1} TH EN

' PRINT *"* E *r r o* no ire ‹ ke1 ” , 48, code o1S

Pâg n a 8

EXIT SUB END IF

IF S(M, 1) < 100 THEN

###### I F E 5 - E8 >= 5 . § THEN

De s v1 o0 — DESVIOIN F — 2 De s vJ o1 = DESVJ:OSUP \* 6 ELSE

#### alpina2

E LS E

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | De s vJ o0 = | YES VIOINF | 2 | “ | E § | - EB} | / | 5 . fi |
| De sv1 o1 = | n E SVIOSUP | 6 | ” | (E § | E8) | / | S . 5 |
| END I *r*  IF E $ | E8 >= S . 5 | THEN |  |  |  |  |  |  |

###### oe s vt o0 = DES VIOINF *—* 1

De sv1 o1 = D ESVIOSUP 1

E LS E

EN0

END IF

I F

###### De s vi o0 DES VIOINF 1 \* ( E ñ - E8 / 5 . 5

Des v 1 o1 DESVIOSUP 1

###### IF ((Te rmi nando% = 0J AND ( (u 7 < De s v o0} OR (U 7 > De s v1 o1} THEN ' PRINT ( "De s vJ o fo ra da faz xa" ) , 48, no de J o1S

EXIT SUB

ELSE

ESTE = - 1

###### Es t eEI5 3 a = — 1

S E L = S E L + 1

I F PRA FORA = — 1§ HEN

I P ( E 3 — E 5} >= 6 THEN

### capabilidade = .85

E L S E

END 1

### Capabilidade = .9

#### u7 = U7 - {E 5 \* US — E8J " ¢1 / Capab1 11 dade 1J

END I K

I F S E L = 1} AND ¢Te <mñ n ando% — 0} HEN

OP E N " 0 " , # 2 , " S E L ECOES . TRIP "

mostra.Label9.visible = -1 mo st ra . Label NO. \/1 s ñ bJ e = — 1 mo s t ra . Label II . Vi s ñ b1 e - — 1

END I F

I \* (Te rma nando% = 0) THEN

PRI NT Á2 , S E L ; " , ’ ’ ; MO0E LO ; " , " , E1 ; " , " , E 3 ; ” , ” ; E S ; " , "



L8 E13 ; “ , " ; E16 ; " , " ; E20 ; " , " ; U7 ; " , " " ; FI S1 ca0 ; " , " ; EN

##### Nos t raEncont rado

ELSEIF (Terminando% = -1) THEN

I F PRA FORA = — 1} TH EN

I F E 3 - E S >= 6 THEN

#### Capabi4 idade = .8S

 ; NC ; " , "

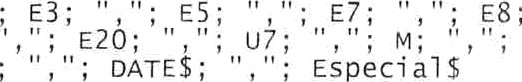
ELSE

#### Capabilidade = .9

##### END IFC

END I F

##### (ES + U7 - E8) \* (1 capabi44dade— lJ

, ¿ 1 .,

E LS E

PR I NT #4 , DODE LO ; "

PRI N^ #4 , ” , " ; E T3 ;

PRINT #4 , NC ; " , " ; SAI FICHA

”’ E16’  ' '' ' '' ’ MOT

msg5 = s RB(7erminando/J

PRIN ms g S

STOP E ND I F

END I F

END SUB

S U B CA L C U LAVA P

##### Pay na 9

A1 e rt avent11ado r = 0

##### I4 = E18 + 18

###### alp4na2

END

###### SUB

SD = V 5 ^ 3 \* VAP (S {M , 14} , 2} + V S ^ 2 \* VA P S (M , 14) , 3 }

SD = SD + V5 ” VAP {S (M , 14} , 4} • VA P S {M , 14} , S S UB

## Calculaws ()

###### Ij = El8 1

I F (T {M , I3) = " 9Ef42 " ) OR (T (M , 13) = " 8 EM2 " TH E N

*' r ev* 3 . 0

1. 07 . 96 po *r* . cj m

alterar o expoente da formula de convergenc4a para 1/3.5

##### 'para convergi mais râpido

US = W ” (MOT /I . 1} / NV) A (1 / 3 . 5)

E LS EI F ¿T QM , 13 = " VA P" OR {T (f4 , I s = " VAL " TH EN

I F $\/ 5 >- VAP §S (M , 13 + 17} , 7} } TH EN

WS = N ” {SD / D4) ^ ( 1 / 5

E LS E

US — 0

###### Nov oMode 1 o = - 2

END

SUB

END I F END I K

I F (ABS {\./S — wAn11 go} < . 001) TF!EN

##### wS = (WS + WAntigo) / 2

###### ENO IF

uAn t1 *go* = w

###### U = (as • wAn t go} / 2

SUB

MO\*

carregaMostra0 ()

###### REDIM SeJec0(100, 16J AS SINGLE, Selec1(100) AS STRING

Ir (Mostra0.lstLncontrado.LJstCount, 0) THEN Total = Hostra0.JsiEncontrado.LisiCounl FOR 13 = 1 TO Total

###### no s t ra0 . 1s t En cont *rado .* R EMOVEITEM 0

N EXT 13

E ND I F

no s t ra0 . Label 1. Capt ñ on - ace rta $ (EIQ Mo st ra0 . Label 2 . Capt on = ace rta S (E3) los t ra0 . Lab e13 . Capt on - Ac e r tal ¢E 'i no s t ra0 . Label 4 . Capt on = xc e *rt* a S ( E8 } 13 = 0

OPEN " I ” , #2 , " S EL ECOES . TO P " DO EHI L E NOT EOF ( 2

I N PUT #2 , S EL , CODE LO , E1 , E 3 , E 5 , E 7 , E 8 , E I3 , E16 , E2 0, U 7 , N , 0 c , > , S PL , ZFñ s 1 c a , EN

I3 = 13 1

##### Selec0(13, 1) = SEL

Selec0(I3, 2J = El Selec0(I3, 3) = E3 Selec0(13, 4) = ES Selec0(I3, 3J = E7

selec0(13, 6) = E8 Selec0(I3, 7) = EIS Selec0(13, 8J = E16 SeJec0(I3, 9J = E20 Selec0(13, 10J - U7 Selec0(I3, 11) = M Selec0(13, 12) = NC

Selec0(13, 13) - &l0 se9ecOCI3, 14) = voi Selec0(13, lS) = SPL Selec0(I3, 16J - EN Selec1(I3J = YODELO

CLO5 E #2

#### 13 = 1

DO

Pâ g1 na TO

#### at pi na2

I F I3 S E L THEN

###### EXIT DO

END I F

I F (S e1 ec0 (I 3 1, 10) > se 1 ec0 (13 , 10a ) THEN

FOR 2 % = 1 TO 16

###### SOAP S e1 ec 0 (I 3, u%) , se1 ec0 (I 3 + 1, 3 %}

N EXT 3 %

#### sWAP Se1ec1(I3J, Selecl(13 \* 1)

I3 = 1

EL SE

#### 13 13 + 1

END I F

LOOP

FOR 13 = 1 TO SEL



ms gS = ms g 8 + ace rt a S (Se1 ec0 (I 3, 3 } S e1 ec0 (I 3 , 10} ) ms g S = ms g$ + Ace rt a S (Se l ec0 (I 3, 4} s e ec 0 {I 3 , 10) ) ms g S = msg S + ace rt aS (Set e c 0 (z 3, 6) ) +

I F (Se1 ec0 (I 3 , 10a < 0J THE N

ms g S = ms gS + xc e rt a S (S e1 ec0 C 13 , ION

E LS E

##### m s g S - ms g $ • " • " + Ace *rt* a$ (se1 ec0(13 , 10a

END I F

###### E15 = INSTR CS e1 e c 1 ¢13 , " — "

EI 5 = VAL (LEFTS (S e1 e c 1 L z 3 , ( EJ. 'i - 1J

###### ms g S - ms g S + SPACES ( 3 • STR $ EN " x" + STR A (se l ec0 ¢1 3, 14) ) ms g S = m s g$ + SPACES (6 - LEN(STR$ (Set ec0C 13, 14$ } }

ms g S = ms g S + STR$ (S e1 ec0 (Z 3, 15 } } Mo s t ra0 . 1 st E ncont rado . ADDITEM MS 98

N EXT 13

###### END SUB

SUB CENTRAL {g

' VAR IAV EI S D E ENTRADA : E2 1= ' E 2 2—

'vARIAvEIS QUE USA: AMIN=AREA MINIMA TRANSVERSAL POR CELULA

' E15=NUMERO DE CE LU LAS

’ c0=VAZAO DE AGU A POR CE LULA (m3/h R=INTENSIDAD E D E PR ECI PITACAO {m3/ (h . n2 )

S E L = 0

I F E 9 = 0 TH EN

#### E9 - P r e s A t rr ( E20 J

###### L6 = E9

END I F

EN — T

FOR EN = 1 TO 6

I *F* ENC EN ) = T TH EN S E L ECT CA S E EN

CAS E I

ENCH — “ A19 "

###### CAS E 2

ENCH = 'N2 0 "

CAS E 3

ENCH = ' SG "

CAS E 4

ENCH = ’ RT ”

C \ S E 5

ENCH = " A 12 "

END S EL ECT E15 = E2 1 3 a% = 0

NOVO E15 % = 0

DO EHI L E E T 5 <= E 2 2 AR EA II N

' S E 0, cA LCU LA A PR E S SAO ATPC .

###### Pâg na 11

at p na2

MODMIN

M = MMIN

\*„„\*”\*,\*’\*vY,\*,",

#### 'M = 19

IF EN <› 6 THEN

G0 = El / El5

ELS EI F EN = 6 THEN

G0 = 2 \* E T / E15

END I F

#### EsteE1.S.J..a.. % = .0...... .

DO EHI LE N <= NUMTOR

###### ' DO PHI LE N = 19

EDTE = 0

ENCHOKO = 1

mostra.Label7.caption STR%(EIS) › x" + STR%(M)

NCMIN

NC = CNIN

IF EN = 6 THEN ENCH = ”SG” NC = 2

CMAX = 2

CMIN = 2

E ND I F

I F NC = 0 THEN M = N \* 1 ENCHOKO — 0

END I F

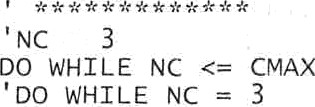
##### U7 = 0

' RE STR ICAO DO PROGRADA

I F (G0 / E10 “ S (x , .3 \* 3 . 6J <= 5 . 5 AND ENCHOK 0 1}

AND G0 / S ¿M , 3 > L I MIT ECHUVA IN F THEN

#### R — G0 / s (u , 3)



mo s t ra . Labe18 . capt on = STRS (NC}

ENCH IME NTO

ENCHOK

I F (A1 <> 0J AND ( E NCHOKI = " TRUE " TH 2N

##### A1 ertaue *r* ke1P ro - 0

CA LCU LATOR R E

###### ' I F S LM , 1} < !00 THEN

' De s v1o0 -- D E SVIOINF 2

Des vi of = DESVIOS UP + G

' EL S E

De sv1 o0 — DESVIOIN F 2

De s v1 o1 - D ES VI OS UP

' END I F

##### I F S (N, 1J < 100 THEu

I K E 5 - E8 >- § 5 TH EN

##### Des v o0 - DESVZ OINF 2 De s v1o1 = DES VIOSU P + 6

ELSE

###### De s v o0 = DE S VIOIN K 2 ' E § E8 /

De s v1 o1 = DES VIOSUP - 6 \* ( ES E 8 7

END I K

E LSE

I F E 5 — E 8 > - S . TH EN

De s v1 o 0 = D ESVIOIN 1

De s v o — n ESV I OSU P 1

E L S E

oe svJ o0 — D F SVIOIN F I ’ E 5 8

##### Pâgina lZ

De s vJ o0J THEN

z1 pñ n a2

##### Desviol DESVIOSUP + 1

END I F END I F

###### I F (Es t eE1 5 3 a — 1J AND ANC CMIN AND §U 7 <

NOVo EUR = I EXIT DO

END I F

I F EN CH <> " RT" TH EN NC - NC \* T

E L S E

NC = NC • 4

E L S E

END Z F

I F ENCH <> "RT " TH EN

NC = NC • 1

E L S E

NC = NC • 4

LOOP

END I F

END I F

I F ( NO v OE 1 1% — 1g TH EN



##### tolerancia

TH EN

THEN

LOOP

##### ' Mudanca para O Caso em que a 100 com ripa tem alta

###### I F ( E s te E1S 3 a = — 1} AND ESTE = 0} AND (U7 < De s v o0)

EXIT DO END I K

###### I F ¿M = MAIN AND (A1 e rt are r I‹e1 P ro — - T} TH EN

MAIN = MAIN \* 1

END I F

M = M + 1

###### ELSE I F ( ENCHOK 0 — 1J AND (Es t eE15 3 a - IQ AND ( ESTE 0)

EXIT DO

EL S EI F ( ENCHOKO = — 1) THEN

I F (M — NIJI N TH EN MW I N = MMI N I

END I F

E ND I F

###### I F ¢U7 < De s vJ o0J AND (E 15 < E2 2 THEN

EXIT DO

END I F

LOOP END IF

NEXT EN CLOSE #2

I F ¢U7 < De s v o0) AND ( E 1 S E2 2 THEN

EXIT DO

END I K

I SE L > 99 TH EN EXIT SUB

E13 = E 15 1

NOvO E1 S% = 0

' S EL ECOES . TO P

IF (SEL = 0) THEN

msg% = "Nenhuma torre foi encontrada !" \* CHRB(13J + CHRS(10) ' \*nsg8 = msg6 + "raso necessite de ajuda, por favor" + CllRS(13) CHRí(l0J

msg% - msg$ "ent‹ e em contato com a ALPINA. ”

PRI No ms g S

E ND I F

E ND S UB

S UB DADOSMOD E LO

#### Page na 13

a1 p1 n a 2

DETERMINA OS VALOAES ESPECÍFICOS DAS VARIAVEIS PARA ESTE MODELO

I F S ¿N , 2) = 1 THEN ’ DET E RMINA O NUMERO DE LADOS CON! AR

###### E13 = 4

E L SE

E13 E2

END I F

#### FI = S {M , 8 - E13) ALTAGUA

##### E4 = E3 - E5

###### TT = T gM , 2 3 + E18

TV = T ( ¥ , 1 \* E18J ROTMOT = S {M , 14 + E18) MOT - s {N , 12 E18J

N P = S (M , 8 + E18) ROTVEN = S (M , 10 E18 I F TT = " DI RETA " TH EN

ET = 1

E LS EI F LEFT$ ATT , 4) = " M EGA " THEN

##### ET = . 9

' AREA DE ENTRADA DE AR

' DEVOLVE H0=ALTURA ENTRADA AGUA

\* DI F E R E NCIA L DE TEMPE RATURA

'ET=EFICIENCIA DA TRANSMISSAO

###### ELSE

ET = . 96

END IF

###### 13 - EI8 + I

CODE LO = RIGHTS (STR S( E1$ ) , L EN (STR $ ( E 15 — 1} +

I F S (M , 18} — 2 AND En t: ra00I.OptBacta(2) . Va1 ue — TRUE THEN

MODE LO = CODELO \* " BE— "

END I F

I F RIGHTS (STR$ {5 (U, 1) , L EN {STR 8 S (M , 1) ) 1} " 230 ” TH EN DODE LO = DODE LO + " AP —240 "

E LS E

END I F

DOD E LO = CODE LO • RIGHT $ {STR S (S (N , tg , L EN (STR$ S (N , Ig I)

ENCH

IF EN — 6 WHEN

NOD E LO = MOD E LO + " — PV"

EL S E

##### MODELO MODELO "/" + RIGHTS(STR$(NC), LEN(STRS(NCjJ IJ +

END IF

I F S (M , 1g 4 OR S (N , I) — 8 TH EN

f 1OD E LO MOD ELO + "— II "

E L S E

I F EI8 = 1 THEN

COD E LO = COD E LO + “ — I "

ELS E

END I F

END IF

COD E LO PODELO \* " - I I "

AND

I F (M < NUMTOR§ TH EN

I F (S {M — 1, 1J = S (M , 1) OR (S {M 1, 13 S (N , 1) ) THEN

I F S N , 2 = 1 TH EN

MOD E LO = MODE LO • ” - I NS "

###### ELS EI \* S ¿N , 2 = 2 THEN

COD E LO = COD E LO + " — AS P "

END I F

END Z F

END I F

I F (Rev% = 0) THEN

PODE LO = COD E LO • " - AE " END I F

##### Es p e ci aI $ = " "

I K É ET 3 < 4 OR PPAE% OR Ê S Ê M , J.8 = AND Ê S Ç M , 1} > 2 0} AND Ç S Ç M , 2 2

Cn c ra00l .optBac1 a (1g . Vai ue - 0) THEN

MODELO = PODE LO \* " — E ” I F E13 < 4} THEN

###### Es pe c al S = " En t r ada de a r po r " stR $ ( E13 + " 1ado s "

END I F

I K P PA E% TH EN

###### E s pe c al S = Es pe c a1 $ + " E n cl men t o em PP —AE "

Pág na 14

END I F

#### at pt na2

I F (S {N , 18J = 1 AND (S(M, 1J > 20) AND (S(M, 2} = 2) AND

(Ent ra00l .optBacl a(1) . Va1ue = 0J THEN

#### EspecJ als = Especl a1 $ + "Bac1 a de concr et o {pe1o c1i enter "

END I F END Z F

##### I F Espec1a1$ = " " THEN

###### Especl at $ = "NADA"

END I F

ENO SUB

FUNCTION Densidade (L9, L6 P7)

##### ’ CAL CULO DA DENSIDADE DO AR

' VARIAVEIS DE ENTRADA : L9=TEMPERATURA DE BULBO SECO ( ' Cg

##### L6=PRESSAO ATNOSFERICA (mba *r)*

' P7=PRESSAO PARCIAL DE VAPOR NO AR UNIDo (mbar) 'SAIDA: L2=DENSIDADE DO AR (kg/m3)

L 2 = . 348 3 ° L6 / L9 + 2 73 . 15J — . 1316 \* P7 / L9 + 2 73 . 15)

### Densi dade = L2

###### END FUNCTION

SUB ENCHINENTO {}

’ LE AS CARACTERISTICAS DO ENCHIf 4ENTO

VARZAVEI 5 DE ENTRADA : ENCH

’ VARIAVEIS DE SAIDA : A1= COEFICIENTE DO ENCHIMENTO PARA MERKEL ' A2= COEFICIENTE DO ENCHII'4ENTO PARA MERKEL

##### ' A3= COEFICIENTE DO ENCHIMENTO PARA MERKEL

' A4= COEFICIENTE DO ENCHINENTO PARA NERKEL A 'i= COEFICIENTE DO ENCHZNENTO PARA NERKEL A6= COEFICIENTE DO ENCHINENTO PARA PRESEST

###### ' A7= COEFICIENTE DO ENCHIMENTO PARA PRESEST

* AB= COEFIC I ENTE DO ENCHI PIENTO PARA PRESEST

###### ’ A9= COEFICIENTE DO ENCHIMENTO PARA PRESEST

* 10= COE FICIENTE DO ENCHIMENTO PARA PRESEST

’ 10- CONTADOR INICIAL PARA LOCALIZAR LINHA DO ENCHI /'4ENTO

' NC= NUMERO DE CAMADAS DO ENCHI BENTO

’ NM= NUI'4ERO NAXIMO DE DIS POSICOES , NA ALTURA , DO ENCHISENTO IF NC <= CMAX THEN

SELECT CASE ENCH

##### CASE "A19"

IF NC = I THEN

A1 = . 92105 22

A2 = . 0701445 6#

A3 = - . 00451107 9#

### A4 = . 000065 3 562# A5 = . 5025269

A6 = 81.31903

#### A7 = -57.931

A8 = 18.53425

#### A9 = -1.875487

A10 = l.Z2S

ELS EIF NC = 2 THEN

##### A1 = 1. 1671481671#

A2 = . 093 3 2178 89#

#### A3 = - . 00 S 9338 5 36#

A4 = . 00008 5408#

#### AS = . S S S 922 692 If

##### A6 = 91.268 6891742#

A7 = —64. 4486813 924#

##### A8 = 20 . 8425 9533 95#

A9 = —2 . 148 67 524 514

##### A10 = 1.225

ELS EI F NC = 3 THEN

#### A1 = l.419108l30Z# A2 = . 114180395 S# A3 = — . 0072194918# A4 = . 000103 6173#

AS = . 6012236296#

#### Página 15

##### ' REM Al9 - 1 CAMADA

' REI'4 A19 - 2 CAMADAS

’ REM A19 — 3 CAMADAS

#### at pJ na2

A6 - 96.1372825878# A7 = — 63 . 760138864 ?é A8 - 20. 036481899

#### A9 = — 1. 984I780449# A10 = 1.2 S

E L S EI F NC - 4 THEN

#### A1 = 1 . 65 6303 93 5 2#

A2 - .1371084013#

### A3 - -.0086003672#

#### A4 - .0001224922#

A5 = .6331144182#

##### A6 = 101. 5 688 37161#

A7 = — G5 . 173973 74 24#

#### A8 = 20.2 708 °i4422#

A9 = — 1. 945 9S 01 S 2 6#

#### A10 = 1.25

ELS EIF NC = 5 TH EN

A1 1. 9I4 787 2217# A2 - .l54S2280l# A3 - -.0096791963#

#### A4 = . 00013 69428#

A 5 - . 63422 788 3 5#

#### A6 = 110. 076269615 #

A7 — -67. 8934719739#

A8 = 20 . 5 7 7 5 81963 7#

A9 = - 1. 9211404867S

# A10 - 1.2375

###### ’ REV A 19 - 4 CAMADAS

REV A19 5 CAN!ADAS

E LS E

STOP

END I F

CAS E " 20 " , "S?"

I F NC = 1 TH EN

###### A1 = . 7 65

A 2 — . 0788

A 3 = — . 0049 A4 = . G0006 4S = . S 9

A6 - 91 . 17

A 7 — — 70 . 12 S A8 = 2 S . 02 S A9 = -2.93515

A10 = 1.025

REM SG/+20 1 CAN!ADA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| E LS EI F NC = 2 THEN  Al = 1.12S17 | ’ | REM | SG/ 20 | 2 | CA\*tADA 5 |
| A2 = . 078 88  A 3 — — . 004 9 A4 = . 00006 A 5 = . 603 7 7  A6 = 94. 17 118 84#  A7 = —70 . 12 5  A8 — 2 S . 02 5  A9 = —2. 93 S US  A10 - 1. 025 |  |  |  |  |  |
| E L S EI F NC = 3 TH EN  A1 = 1. 444 S 782 # | ' | REV | SG/>20 | 3 | C 4MADA S |

A10 = I . 025

|  |  |  |
| --- | --- | --- |
| A2 | = | . 10105 |
| A3 | - | . 0063 7 |
| A4 | = | . 00008 |
| 45 | = | . 63 787 |
| A6 | — | 98 . 74 219 |
| A7 | — | —7 0 . 2 14 S 69# |
| A8 | - | 2 4 . 78249 |
| A9 | = | - 2 . 8 62 68 |

E LS EI F NC = 4 ^H EN

##### AT = 1. 731248 9#

A2 - . 123 99

###### A 3 = — . 008 06

Pâ g na J.6

###### REM SG/>2 0 4 CAN!ADAS

A4 = . 00012 AS = . 65889 A6 = 103 . 89

A7 = — 70. 896

### A8 = 24. 80478

##### A9 = —2. 8 33 5 3

A10 = l . 025

ELS EI F NC = § THEN

##### A1 = 2. 0179701#

A2 = 14691 A3 = - . 009748 A4 = . 00016

###### A 5 — . 68

A6 = 110 . 64 7 93 4#

A7 = — 72 . 62 26

##### A8 = 25.3825989#

A9 = -2.89711

Al0 = 1.025

##### alpina2

###### REM SG/W20 - S CAMADAS

ELSE

###### STOP

END IF

###### CASE ”RT”

IF NC - 14 THEN

#### A1 = 1.064

A2 = .035264

A3 = -.00235524#

#### A4 = .000040288#

##### A5 = .54785

A6 = 68.7952

#### A7 = -37.694176#

##### A8 = 11.979728#

A9 = -1.245792

### A10 = 1.3

ELSEIF NC = 18 THEN

A1 = 1.232

# A2 = .040832

A3 = — . 002 7 2 712f A4 = . 000046649# A S = . S 4785

##### A6 = 79 . 65 7 6

A 7 = — 4 3 . 645 888#

A8 = 13 . 871264#

##### A9 =— 1 . 4 4 2496 A10 = I . 3

ELSEI F NC = 2 2 THEN

A1 — 1. 4 A2 = . 0464

A3 = - . 003099

A4 - .00005301#

#### AS = . 5478 5

A6 = 90. 52

#### A/ = -49. 5976

A8 = 15 . 7 628

#### A9 =— I . 63 92

##### A10 = T . 3

REM RT 14 CAMADAS

##### \* REM RT 18 cAMADA 5

###### REM RT 22 CAMADAS

EL SE

###### STOP

END IF CASE ”A12”

Ir NC = 1 THEN A1 = 0

##### A2 — 0

A3 = 0

A4 = 0

##### A5 = 0

A6 = 0

A7 = 0

##### A8 = 0



Pay na 17

# A9 - 0

## A10 = O

E LS EI F NC = 2 THEN

AT = 1. 348S A2 = . 06692 A3 = -.00441

A4 - .0000583#

AS - .632

A6 - 73.2905

#### A7 = -40.853607#

A8 - 11.846

#### A9 = - 1 . 02988

A10 = 1 . 5 377 5

ELS EI F NC = 3 TH EN

A k - 1 . 7438202#

A2 = . 0827 8

A3 = -.0053415# A4 - . 0000686# A 5 = . 63 2

##### A6 - 87 . 8 08 5 8

A7 - - 0 . 14119

#### A8 - IS . 3 9677

##### A9 = — 1. 4 5 671

A10 = 1.S

ELSEIF NC = 4 THEN A1 = Z.2046938# A2 = . 10419

##### A 3 - — . 0067 2

A4 = . 00008 9

##### A 5 = . 63166

A6 = 119. 7 63 2

A7 = —7 2 . 507 7 21#

A8 = 21. 711

## A9 = -1.94488

#### 10 = 1. 5I25

E L S EI F NC = S TH EN

#### A1 = 2. 583

###### A2 = . 123 7

A 3 = - . 007 97 A4 - . 0001 A5 — . E3 2

A 6 = 112 . 317 7

7 = — S 8 . 8 47 9

#### A8 = 17 . 493088 #

##### A9 = —1. S 3 3 18

A10 - 1. 5

##### alpina2

###### ' RFP A12 — 2 CAMADAS

' RE ł A12 — 3 CAMA DAS

###### ' REV A12 — 4 CANADA 5

’ REV AND - Ş CAMADAS

ELS E

###### STOP

ELS E

END I F

END S E LECT

###### NC 0

END IF

ENO SUB

SUB ENCHOIt (

'VERIFICA SE E' POSSIVEL ESTE ENCHIMENTO NESTE MODELO

VARIAV EIS D E ENTRADA '

' VA R IAV EI S QUE USA : NC0 ’ E

I F Ę NC >= CNI N AND MC <= CMAX THEM

ENCHOlt 1 = "TRUE "

E L S E

ENCHOK1 - " FALS E "

E ND I F END SUB

##### SUB ENTALP ( L9, r 3

###### Pag na 18

CA LCULO DA ENTAL PIA DO AR UNIDO

###### a1 p na 2

’ VAR ÍA VEI S 0 E ENTRADA ' L9—TENIPERAJ”URA DE BUL BO S ECO ( ' C

L 3=TEOR DE AGUA 00 AR UNIDO C kg / kg ’ SAIDA : =ENTAL PIA DO AR UNIIDO

#### L4 = 1. 006 " L9 L 3 \* L2501. 6 + 1. 86 " L9J

END SUB

##### UNCT 1ON Enta 1 pl a ( L 9, L 3

’ CAL CULO DA ENTAL PIA DO AR UNIDO

' VARIAVEI S DE ENTRADA : L9=TEMPERATURA DE BULBO SECO ’ C)

##### L 3=TEOR OE AGUA DO AR UNIDO C kg/ kg)

' SAIDA : = ENTAL P ÍA DO AR UMIOO

#### L4 = 1. 006 ” L9 • L 3 "" (2501. 6 + 1. 86 ” L9J

Ental pJ a = L4

END FUNCTION

SUB L EDADOS (g USUA L

L ETORRE

' LE89EM2

LEVA P EN0 SUB

SUB L ETORRE {§ OPEN " I " , #S , FOR I3 = 1 TO

###### POR 1 = l

INPUT NEXT J

###### NEXT I3 CLOSE #§

OPEN "I", #3,

POR I3 = 1 TO

FOR 3 = 1

###### INPUT

"ALPINA.DAT"

NUMTOR

###### TO 21

#S, S(I3, Jj

"ALTAGUA 1 . DAT"



NEXT

###### CLOSE 43

OPEN " I ” , # 3,

##### FOR 13 = 1 To

###### FOR 3 - 1

IN PUT

NEXT 3

###### NEXT I

CLOSE #3

OPEN " I " , #3 ,

FOR I3 = l TO

FOR = 1

IN PUT

NEXT 3

NEXT 13

CLOS E 43

OPEN " I ” , # 3 ,

##### FOR T 3 = 1 TO

FOR 3 = I

IN PUT

NEXT J NEXT I3 CLOSE # 3

OPEN " I " , #3 ,

KOR 13 = I TO

###### FOR 3 = 1

IN PU<

NEXT 3

NEXT 13

CLOSE #3

OPEN " I " , # 5 ,

###### 13 = 1

”ALTAGUA3 . OAT ”

## 6

###### TO 4

# 3 , AA 3 ( I 3 , 3 g

" A LTAGUA4 . DAT "



TO 43

#3, AA4(I5, j)

" P I LAR ETE . DAT "

6

TO 7

# 3, PI LAR Ç 1 3, 3

" MI NCAM . DAT "

NUMTO R

TO 7

 , NCM(I3, jj

###### "TEXTO . DAT "

Pág na 19

al p á n a2

FOR 13 - I TO NUMTOR FOR 3 = 1 TO 27

INPUT # 5 , T{I3 , 3

NEXT 3

###### NEXT 13

C LOS E # 5 END SUB

SU B L E VAP ( )

###### OPEN "1", #5, "VAP.DAT"

IN PUT # 5 , NLINVAP

###### FOR I = 1 TO NLINVAP FOR 3 = 1 TO 8

INPUT #5, VAP(13, J)

NEXT

NEXT 13

C L OS E Á § E ND S UB

SU B MERI+E LENCH $g

' PARA CALCULO DO MERK E L DO ENCHINVENTO

'VARIAVEIS DE ENTRADA: A1 A A4-COEFICIENTES DO ENCHIMENTO

' A 5=DERIVADA DA CURVA CARACT ERI ST ICA

' R= INT ENS I DADE DE PP ECI PI TACAO {m 3/ (h . m2) ) ...-' H0=ALTURA DE ENTRA DA DE AGUA Çm)

E4=DELTA — T

###### ' L= LAN BOA ’' ’/^ 'VARIAVEIS DE SAIDA: K3=MERKEL DO ENCHIMENTO ' 'VARIAvEIS USADAS: K0=MERKEL DO ENCHIMENTO - VALORES INTERMEDIARIOS

' F9=CORRECAO EM FUNCAO DA INTENSIDADE DE PRECIPITACAO

##### K0 = A1 • A2 R + A3 " R ^ 2 + A4 " R ^ 3

'\*\* Estimativa do Numero de Merkel com Enchimento W20.

##### " " " Est mado que se ten ha 12% a ma s no *ya o r* de K0 . conlo rme con s t a

###### \* " \* de es t udos da En g enh a rJ a .

I F ENCH = ">20" TH EN

##### K0 = 1. 12 “ K0

END I F

###### F9 - . 2 78 8 67 + . 078 9667 “' R — 3 . 04 S 44 E - 03 ” R ^ 2 + 2 . 802 92E — 0 S “ R ^ 3

K0 = K0 F9 \* {H0 — 8 . S ) / ( HO “ 1 . 62 • 8 . 5 : REM CORRECAO EM NUNCA O DE ri0 K0 = K0 ' (1 - . 007 ” E4 — 10J : R EM CORRE CAO EM FUNCAO DO DE LTA -T

K3 = K0 " L ^ A § : REF MERK EL DO E NCHINFNTO END SUB

SUB MERK E L PRO Ç$

' CA LCU LO DO MERKEL DO PROCES SO

' VARIAV EI S DE ENTRADA : TT=TA$

+2=TAF

###### ' H1=ENTALPIA DO AR NA ENTRADA

L = LAN BOA

’ L6-PRESSAO ATMOS FERICA ’ V4R IAV EI S OE SAIDA : K=NERKEL DO PROCES SO

’ VA R IAV E I S USAOAS : N—NUN!E RO DE I NTERVA LOS DE ? ALCULO

' D 7=INTERVA LO DE CEP PERATURA CORRES POND ENT E

’ D8—I NTERVA LO DE E NTAL PIA CORRES PUNDE NT E

' K=N!E RK E L DO PROCES SO

’ T0=TENPERATURA DO AR UNT0 A GOTA DE AGUA H7= E NTAL PIA DO AR CORRES POND END-E A T0

H 6= ENTA L PIA DO AP

L 7= UMIDADE RELATI VA

L 6= P R E S SAO ATM O S F E R I CA

’ L 5 —A LTI UDE

L 4= ENTA L PIA DO AR UMI DU ( k 3 / k g ) VINDA DE PR OPA R

1 e rta12% = 0

N = INT ( (TI -

CALCULO PARA ’ N- 4

T2 } / 2 + 5 / ?) ’ 2 j

FI CAR IC UAL A CAMD INOX

Pág ne 20

alpina2

##### D7 = {TD — t2 / ¢N — Tg D8 = D7 " 4. 18 68 / L

K = 0

FOR 3 - 1 TO N

T0 = T2 + D 7 ” (0 1)

###### H 7 = H1 D8 \* (3 1J

' CA LCUL 0 PARA FICAR IGUA L A CASOI M1X

' IF 3 = 1 THEN T0 = T2 + . 10267 3 " {TT T2§ ' I F 3 = 2 THEN T0 =- T2 + . 406204 \* {T1 — T2 I F 3 = 3 THEN T0 —- T2 + . S 93 7 96 “ ÇT1 — T2) ' I F 3 = 4 TH EN T0 = T2 • . 89 7 3 2 7 " (+1 T2) ' H 7 - H T \* (T0 — T2) " 4 . 1868 / L

' “- “-ü a“ 7, "r 7, Y- Y, Yr + Y,", ü

###### L9 = T0

L 8 = +0

##### L 7 = 100

PROPAR

3 UNTO A GOTA DE AGUA

H 6 = L4

' GOSUB 5 110 : R EN CAL CULO DAS PROPRIEDADES DO AR

H6 SERA ' A E NTAL PIA DO AR SATURADO

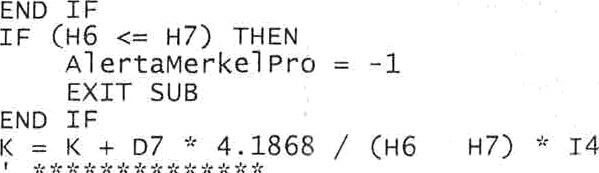
I K 3 = 1 OR 2 = N TH EN

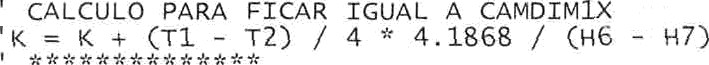
14 = 1

##### ELSEIF INT(J / 2J = J / 2 THEN I4 - 4

ELSE

### 14 = 2





NEXT J

K = K / 3 E ND S UB

STATIC SUB MODMIN ()

' MERKEL DO PROCESSO

' CALCU LA O MENOR MODELO POS SZVEL PARA O RES FRIAM ENTO EN QUESTA O

FOR M = 1 TO NUMTOR

IF S(M, 3j > AMIN THEN

MMIN = M EXIT FOR

END IF

NEXT M

END SUB

##### SUB MostraEncontrado ()

msg8 - MODELO SPACES(29 - LEN(AcertaB(E1)) - LEN(MODELO))

 = m s g S A ce *rt* a S ( E I) + ” ’

##### valor

##### Vai o r

= E 3 U 7

= ms g S + Ace rca$ (valo r} + ’ ’

= E 5 + U 7

m s g $ = ms g S Ace *ra* a$ ÇVa 1 o *r)* • " "

Val o r = E 8

n s g S - m s g S + A c e et a $ ÉVa 1 o r

###### Valor = U7

I F Ê U 7 > 0} THEN

###### msg S = msg $ + " " • Ac e rta $ (vai o *r)* + "

E LS EI F (U 7 < 0J THEN

msg5 = msg% Acerta$(valor) ' ”

END I F

m s g S = m s g $ sTR S ( E15 ) “ x " \* STR $ MOT) + S PAC E $ ( 6 — L EN ( STR S (MOTA )

##### Pãgina 21

END

ms gS = ms gS + SARS ¢S P L}

I F S E L = 1g THEN

##### mo s t *ra .* Label 12 . captl on

E LS EI F S E L = 2) TH EN

#### mostra.Label13.Caption

ELSEIF (SEL - 3) THEN

#### mostra.LabeJ14.Caption

ELSEIF (SEL = 4J THEN

#### mostra.Label15.Caption

E L S EI F (S E L = S } THEN

##### mo st *ra .* Label 16. Capt on

E LS EI F S E L = 69 TH EN

##### mos t ra . Labe117 . Capt:1 on

E L S EI F (S E L = 7’} THEN

###### mo s t *ra .* Label 18 . Capt on

ELS EI F S E L = 8) TH EN

##### cos t ra . La bel I9. Captl on

E LS EI F {S E L = 9) TH EN

##### mo s t ra . L abel20 . Capt on

E L S EI F (S EL > 9J THEN

most ra . Label 12 . Capt on cos t ra . Label I3 . Capt on most ra . Label 14. Capt1 on mostra.Label15.Caption most ra . Label 16. capt 1on mos t ra . Label 17 . Captl on mo s t ra . Lab el 18 . Capt1 on mo s t *ra .* L abe119 . captl on mos t ra . Label 20 . Capt on

END I F

S UB

#### alpina2

= msgB

#### = msgB

= msgs

#### = msgB

= msg%

- msgB

= msgB

#### = msg$

= msg$

#### = most ra . Label 13 . Capti on

= most ra . Label 14. Capt1on

#### = most ra . Label 15 . CaptJ on

###### mo s t ra . Label 16. Captl on

= mo s t r a . Label I7 . Capt on

* mos t ra . Label 18 . Capt 1on

###### mo s t ra . Label 19 . capt on

* mo s t r a . La he1 20 . captñ on

= ms g S

S UB

NCA IN (}

SELECT CASE ENCH

###### CASE "Al9"

CII N = NCM {N , 2

CMAX = NCM {M , 3)

###### CASE "> 20 "

CAIN = NCM (M , 4g

CMAX = NCM {M , 5) CAS E " SG "

CAIN = NcN (u , 4g

CMAX = NCr4 {M , S

CAS E " RT"

CAIN = NCM (U , 6J

CNAX = NCN M , 7

CAS E ” A12 ”

CMIN = NCM(M, 2)

CMAX = NCM(M, 3j CASE ELSE

PRINTER.PRINT "ENCH="; ENCH STOP

END SELECT

END SUB

FUNc \ ou P r e sArm ( E 20}

#### P resAtm = 1013 . 2 5 " ( (288 6. S '’' E20 / 100oJ / 2S8J s . z s s

END FUNCTION

S UB PR ES E ST

###### CALCULO DA PERDA DE PRESSAO ESTATICA NA TORRE

'VARIAVEIS DE ENTRADA: F1=AREA DE ENTRADA DE AR NA TORRE (m2) ' A6 ATE A1O=COEFICIENTES DO ENCHIMENTO

###### R=INTENSIDADE DE PRECIPITACAO (m3/(h.m2))

R1=DENSIOADE DO AR NA ENTRADA (kg/m3)

R4-D EN S I DAD E Y EDI A DO AR ( k g / m 3

## alpina2

**VaZ=VAZAO VOLUNETRICA I'4EDIA DO AR (m 3/** s ) E16=PERDA DE PRESSAO ESTATICA ADICIONAL (mmCA) W=VELOCIDADE NEDIA DO AR NA TORRE (m/S)

##### ' VARIAVEIS DE SAIDA : D4=PERDA DE PRESSAO ESTATICA TOTAL {+mCA)

' D1=PERDA OE PRESSAO *E STATTCA* NA TORRE (mmCA$

##### ' VARIAVEIS QUE USA : w1=VELOCIDADE NEDIA DO AR NA ENTRADA DA TORRE {m/S)

’ D2=PERDA DE PRESSAO ESTATICA NA ENTRADA DA TORRE Pa}

##### ' z1=ZETA NO INTERIOR DA TORRE

D3=PERDA DE PRESSAO ESTATICA NO NEIO DA TORRE {Pa}

I F S(M , 2) = 1 THEN

##### D2 = 4 \* U ^ 2 \* R4 / 2

E LSE

##### D2 = I . 76 \* w1 A 2 " R1 / 2

END I F

##### z1 = A6 + A7 \* U + A8 \* U 2 + A9 \* w ^ 3 + A10 \* R — 10)

D3 = z1 \* w ^ 2 \* R4 / 2 D1 - (D2 + D3 / 9. 807 D4 = D1 + E16

END SUB

##### FUNCTION Pres Pa rvap (P4, L9, L8, L6J

###### ’ PRESSAO PARCIAL DE VAPOR DO AR Uf•\IDO

' VARIAVEIS DE ENTRADA : P4= PRESSAO VAPOR SATURADO , COM BASE NA TBU ' L9=TEMPERATURA DE BULBO SECO DO AR ' C§

’ L8=TEMPERATURA DE BULBO UMIDO DO AR ’ Cg

###### ' L6=PRESSAO ATNOS FERICA (mbar)

’ SAIDA : {P79=PRESSAO PARCIAL DE VAPOR NO AR UMIDO {abará

##### P7 = P4 - 7. 4412 - € (67 - L 8) / 420J ^ 2) \* L8 / (L8 + 23 5) \* (L9 - L8) \* L6 / 1006. 7

PresParvap = P7

**END FUNCTION**

##### FUNCTZON Pr es vapsat ( P8)

’ CALCULO DA PRESSAO DE VAPOR SATURADO

' VARIAVEI S DE ENTRADA : **P8=TEMPERATURA DO** AR ( ’ C)

’ SAIDA : PRESSAO DE VAPOR SATURADO (mbar}

##### C1 = (7 . 4412 — ( (67 - P8} / 420) ^ 2) ° P8 / (P8 + 23 5) I F P8 <= 67 THEN

P9 = 6. 1075 ” 10 ^ c1

##### (- 4)

**ELSE**

09 = 6. 107 3 \* 10 C1 + ((79. 5 — P8) 2 / 1. 11 99) " 9. 807201 \* 10 ^

END I F

## Presvapsat = P9

##### END FUNCTION

SUB PROPAR ()

' SUB - ROTINA PARA **CALCULO** DAS PROPRZ EDADES **TERNODINANICAS** DO AR UMIDO

##### 'UARIAVEIS DE ENTRADA: L9=TEMPERATURA DE 8ULBO SECO ('C)

L8=TEMPERATURA DE BULBO UNIDO ' C)

###### L6=PRESSAO ATMOS FER ICA (mbar)

' L §=ALTITUD E {mNM)

' SAÍDAS : P7=PRES SAO PARCIAL DE VAPOR NO AR UNIDO

' P5=PRESSAO DE VAPOR SATURADO COMI BASE NA TBS ' P4=PRESSAO DE VAPOR SATURADO CON BASE NA TBU ’ L7=UMIDAD E RELATIVA DO AR (%)

L4=ENTAL PIA DO AR UNIDO (k0/kg} L3=TEOR DE AGUA DO AR UMIDO (kg/kg) L2=DENSIDADE DO AR UMIDo (kg/m3)

P5 = eresVapsat(L9)

P4 = P r e s Vap S at L 8)

###### 7 — Pre s Pa rvap CP4, L9, L 8, E9}

L3 = Teo rAgua (P7 , E9)

L 7 = UR P 5 , P7)

#### L4 = Ental pt a(L9, L3}

##### L2 = Den sldade(L9, E9, P7)

END SUB

##### <\*91 na 23

5U8 SAIFICHA {}

##### ' SAIDA VIA INPRESSORA

contaer r = 0

ON LOCAL ERROR GOTO CheckError PRINTER . Pri ntTarget = "LPT1 : OIM Pressao(1 TO 25)

## aJ pt naz

###### PRINTER.PRINT TAB(23); "TORRE DE RESFRIAMENTO DE AGUA A L P I N A"

TAB (23} ; " - - - ---- ---—- - — — — — -— —— ’

/t . TT

O E 2 ECOES . TI\IP"

H LE' NOT’ EOS Î

INPUT #2, ZSEL, ZMODELO#, ZE1. ZE3, ZE5, ZE7, ZE8, ZE13, ZE16, ZE20,

## zu7,

ZN , ZNC , ZS , ZMOT , ZS PL , ZF1 sï Ca , ZEN

IF (ZNODELO $ = MO0ELO§ THEN

EXIT DO

END I F

" / " ¡

LOOP

CLOSE #2



## ' Retî rar a 1mpressao da cot eranc1a

PRINTER . PRINT TAB(10J ; " FICHA TECFIICA N 

#### IF ZF1 SJ Ca >= 0 THEN

PRINTER . PRINT 200 + INT ( {ZFJ s1ca + . 05 ° 10)

#### ' ELSE

' PRINTER . PRINT 100 + ABS (INT( (ZFI s1Ca - . 05) “ 10a ) ;

END I F

PRZNTER . PRINT " / " ; RIGHTS {DATE $ , 2)

PRZNTER . PRINT

#### PRINTER.PRINT TAB(10); ”CLIENTE: ”; Entra001.txtcliente.Text;

##### PRINTER . PRINT TAB{60J ; "DATA : " ; MID$ (DATE$ , 4, 2) ; "/" ; LEFT$ {DATE $ , 2) ;

###### RIGHTS (DATE$ , 2}

PRZNTER . PRINT

###### ’ PRINTER . PRINT

PRINTER . PRINT TAB {10) ; "DADOS DE PRO3 ETO : " ; PRINTER . PRINT TAB (50) ; "PRO3 ETO" ; TAB (65) ; "REAL" PRINTER . PRINT

###### PRINTER . PRINT TAB {10} ; "CARGA TERMICA ";

PRINTER . PRINT USING ”#####4##" ; E1 ° {T1 — T2) \* 1000 ; PRINTER . PRINT TAB (60) ;

PRINTER . PRINT USING " ########" ; E1 \* (T1 - T2) \* 1000 ;

##### PRINTER . PRINT TAB(73) ; " kcal /h"

###### PRINTER . PRINT TAB (10) ; "VAZAO DE AGUA TOTAL " ;

PRINTER . PRINT USZNG "######## . # " ; E1 ;

###### PRINTER . PRINT TAB (60) ;

PRINTER . PRINT USING "44#####4 . #" ; E1; PRINTER . PRZNT TAB (73} ; "m3/h "

###### PRINTER. PRINT TAB(10) ; "TEMPERATURA DE AGUA QUENTE. ” ;

PRINTER . PRINT USING "#####4## . #" ; se J ec0 (1, 3 ;

PRZNTER . PRINT TAB(60} ;

PRZNTER . PRINT USING " #4###### . #" ; T1 ;

###### PRINTER . PRINT TAB 73) ; " ’ C"

PRINTER. PRINT TAB(10); "TEMPERATURA DE AGUA FRIA. " ;

###### PRINTER . PRINT USING " ######## . #" ; Set ec0 (1, 4J ;

PRINTER . PRINT TAB (60} ;

###### PRZNTER . PRINT USING " ### ##### . # " ; T2 ; PRINTER . PRINT TAB {7 3 } ; " ' C "

PRI NTER . PRI NT TAB (10) ; "TEMP ERATURA DE BULBO UMIDO DO AR " ;

PRINTER . PRI NT USING "4# #4##4# . #" ; E8 ; PRINTER . PRI NT TAB (60) ;

PRINTER . PRINT USING " ######## . #" ; E8 ;

###### PRINTER . PRINT TAB É73) ; " ' C"

PRINTER . PRINT TAB {10} ; "ALTZTUDE LOCAL ";

###### PRINTER . PRZNT USING "########" ; E20 ;

PRIhTER . PRINT TAB (60} ;

PRINTER . PRINT USING "########" ; E20 ;

#### Pág1 na 24

PRINT ER . PRINT TAB ( 7 3 } ; " mNlvl ”

##### a1p1 na2

' PRI NTER . PRINT TAB 10J ; "PRE S SAO ATMOS FERICA ";

\* PRINTER . PRINT USING "######## . 4# " : L 6 ; ' PRINTER . PRINT TA B (60J ;

'PRINTER. PRINT USING "########.##" : L6; 'PRINTER. PRINT TAB(73J ; "mbar"

##### INT ER’ PRINT T

I 4 B '

##### 0 NIVEg DH

R UIDO’’ ’ ’ ’ ’ ’ ” ;

E

ELS E

PRINTER. PRINT "SILENCIOSO" ; TAB(60J ; "SILENCIOSO"

IF E18 = 1 THEN

PRINTER. PRINT "STANOARD" ; TAB(60) ; "STANDARD"

ELSEIF E18 = 2 THEN

PRZ NTER . PRINT " SI L ENCI0?O" ; TAB ( 60J ; " SI LENCIOSO"

END IF

END I F

PRINTER. PRINT TAB(10); ”PRESSAO SONORA POR VENTILADOR, A 2m...” ;

PRZNTER . PRINT USING "###4####" ; SPL ; PRINTER . PRINT TAB §60J ;

PRINTER . PRINT USING " ########" ; SPL ; PRINTER . PRINT TAB (73 ; " dB {A§ "

IF S(M, 2) = 2 THEN

PRINTER . PRINT TAB ( 10) ; " ENTRADA DE AR POR ” ;

PRINTER . PRINT US ING " ### ##4 # # " : E13 ; PRI NTER . PRINT TAB (€i0J ;

PRINTER . PRINT USIN¢i " ########" ; E13 ;

PRI NTER . PRINT TAB ( 7 3) ; " LADOS "

END I F

PRINTER . PRINT

PRINTER. PRINT TAB(10): ”TORRE SELECIONADA: ” ;

RI NTER . PRINT TABC 3 5 ; NODELO PRINTER . PRINT

PRINTER . PRINT TAB 10J ; "TIRAGEM DO AR .. . . .. . . ... . . ... . . ‘ ;

I F S (N , 2) = I THEFJ

PRINTER. PRINT "FORCADA"

E LS E

PR I NTER . PRINT "INDUZ IDA "

END I F

PRINTER. PRINT TAB(10) i ”NUMERO DE CELULAS. ” ;

PRINTER . PRINT U SI NG "####### # " ; E1 §

PRINTER . PRINT TAB (10J ; " TI PO DE ENCH I MENTO " ;

I F EN - 6 TH EN

PRINTER . PRINT "To r *re* s em En ch1men to " ; ELS EIF (ENCH = " SG " } THEN

PRI NTER . PRINT " GRAD ES TRA P E ZOIOA I S ” ;

###### I E nt ra001. ch ec k4. Va1 ue = 1 THEN

PRI NTER . PRI NT ‘ ' — A E ”

EL S E

PRINTER . PRINT " "

END IF



PRINTER.PRINT "BLOCOS DE FILME CORRUGADO" ELSEIP (ENCH - "W20”j THEN

PRINTER. PRINT ”BLOCOS LAVAVEIS DE CHAPAS" ELSEIF (ENCH = "3T") THEN

PRINT ER . PRINT " BARRAS AUTO— LAVAV EI S " END I F

PR I NTER . PRINT TAB 10} ; "VAZAO DE AR EM CADA V EN+ILADOR ";

PRI NTER . PRINT US ING ” ######## . ##" ; V 5 ;

PRINTER . PRINT TAB( 60) ; " m 3/ s "

P R I NT E R . P R I NT TA B 10 § ; " D E RDA D E P R E S SAO E STATECA NA ”OMRE " ;

PRINTER . PRINT USING “ ## ### # ## . ## " ; D4 - E 16 ; PRI NTER . PRINT TAB(60) ; " rr+ c "

I F E1G <> 0J +H EN

PRINTER. PRINT TAB(10) ; ”PERDA DE PRESSAO ESTA\*ICA ADICIONAL. ” ;

PRINTER . PRINT USING " 44 ###4#4 . ## " ; E T6 ; PRINTER . PRINT TAB 60} ; " mmcA "

PRINTER . PRINT TAB ( IOJ ; ” PERDA DE PRES SAO ESTATICA TOTAL “ ;

Pagina 25

#### aJpina2

PRINTER. PRINT USING "########.##" : D4; : PRINTER. PRINT TAB(60) i "mmCA"

END I F

PRINTER . PRINT TAB(10) ; "D ENS I DADE DO AR NO VENTILADOR " ;

PRINTER . PRINT USING "#4### #4# . ## " ; R 5 ; PRINTER . PRINT TAB(60) ; "kg/m3 "

PRINTER.PRINT TAB(10) i "MODELO DO 1’ENTILADOR. ” ;

##### 13 = E18 + 1

I F {S (M , 1} - 63 TH EN

###### ModVen t = " vAL— 148 3/8 '

AN = 4 S

E LS EI F {T ¿M , 13 = " 9EM2 " } OR (T {M , 13) — " 8EM2 " } TH EN

Modvent = T {N , 13 STR $ {S {M , 17 + I3 ) + " K "

#### Modvent = Modvent + RIGHTS ¢5TR$ {NPg , LEN (STR$ {NP) — 1}

###### z F s (¥ , 7} <> S (N , 17 + 13) THEN

uodven t - ModVent " ( " + FORSAT $ (S {M , 7) , "# . ## ”) " ) "

END I F

I F HAN — I NT HAN g < . 2 'i TH EN

AN = I NT {AND

E LS E

I F (AN - INT (AND ) < . 7 5 THEN AN = I NT(AN) • . 5

E LS E

AN = I NT (AN ) + 1

END I F

END I F

E LS E I F QT §M , I3 g - " VAP " OR (T {M , 13 = " VA L " } THEN

ModVen t = RIGHT$ (STR$ S (u , 7} \* 1000a , LEN (STR$ (S §M , 7) ‘ 1000a ) -

ModVent = TQM , I3J • "— " nodv ent + "/ "

Modvent = YodVent RIGHT$(STR$(NP), LEN(STR5(NP)) - 1) + "/"

###### uodvent = vodven t RIGHTS (STR$ {AN) , LEN STR $ LAN) ) — IQ

END I F

PRINTER . PRINT " " + uodVen t

PRINTER . PRINT TAB( 10) ; "D I AMETRO DO VENTI LADOR ,”

PRINTER . PRINT USING *" ######## " ,* S (M , 7) “ 1000 ;

PRINTER. PRINT TAB(60) ; "mm"

PRI NTER . PRINT TAB 10J ; "ANGULO DAS PAS ”

###### I F ( (S (U , U = 63 } THEN AN = 4 5

END I F

PRINTER . PRINT USING “ ######## . # " ; AN ;

PRINTER.PRINT TAB(60) ; "GRAUS"

PRI NTER . PRINT TAB{10) ; "TRANSMI S SAO . . . . . . .....

###### PRINTER . PRINT T §M , 2 é + E18J

I F T (M , 2 3 • E18 <> " DI RETA" THEN

PRI NTER . PRINT TAB(10J ; " TAXA DE R EDUCAO ... PRI NTER . PRI NT USI NG " # . ## " , S {N , 14 • E18

END I F

. . . . . . . . . . . . . . . . . . . 

/ S(M, 10 El8)

PRINTER. PRINT TAB(10) i ”POTENCIA D0 MOTOR ELETRICO. ” ;

I F NOT < 1 THEN

PRINTER . PRINT USING "######## . 4# “' NO\* :

E LSE

PRINTER. PRINT USING "########.#" : MOT;

END I F

PRINTER . PRINT TAB(60a ; " cv "

PRINTER . PRINT TAB(10J ; " POTENCIA CON SUMI DA PELO VENTILADOR " ;

PRINTER . PRINT USING ” ### ## ### . # " ; NV ;

PRI NTER . PRINT TABC 60J ; "B HP "

PR I NTER . PRINT TAB 10} ; "ROTACA 0 00 V ENTILADOR ” ;

PRI NTER . PRINT USI NG " ## # # ###4 . #" ; S (M , 10 + E 18) ;

P RI MT E R . PRINT TABC 6 0 : " R P M "

PRINTER. PRIN\* TAB(10J ; ”VELOCIDADE PERIFERICA DO VEN\*ILAOOR. ” ;

PRI NTER . PRINT US I NG " ## ## #### . # " ; UA ; PRINTER . PRINT TABL60J ; " m/ s "

PRINTER . PRINT TA8( 10) ; " MOTOR E L ETR ICO TI PO "

PRINTER.PRINT T(M, EI8 + 3)

PRINTER.PRINT TAB(10): ”PERDA DE AGUA POR EVAPORACAO.

PRINTER. PRINT USING "########.##" ; 100 (\*1 - T2) / LH2 - H1) / 4. 18 7 /

Paq1 na 26

al pl na2

(X2 - X1) - T2} ; : PRINTER . PRINT TAB(60) ; "%"

PRINTER.PRINT TAB(10J; ”PERDA DE AGUA POR ARRASTE.............

###### TAB {60) ; "1"

PRINTER . PRINT TAB 10) ; "ALTURA DE ENTRADA DE AGUA QUENTE " ;

###### PRINTER . PRINT USING "######4# . #" ; H0 ;

I F (S (N , 18) = 2 AND PI LAR ETE <> 0} THEN PRINTER . PRINT TAB (60) ; "m (°) " ELSE

###### PRZNTER . PRINT TAB(60) ; "m"

END I F

I F (S (M , 1) < 100 OR EN = 69 THEN

##### PRINTER.PRINT TAB(10J; "PRESSAO REQUERIDA NA ARVORE " ;

ELSE

## 0. 1" ;

PRINTER . PRINT TAB 10) ; "PRESSAO REQUERIDA NOS CANAIS " ;

END IF

TudoBem% = - 1

PRE! - 0

IF EN = 6 THEN

##### PRINTER.PRINT USING "########.#”¡ 10;

PRINTER . PRINT TAB(60) ; "mCA"

E LSE I F S (M , 1) >= 100 THEN

PRINTER . PRINT USING "4####### . #" ; . 5 ; PRINTER . PRINT TAB{60) ; "mv"

ELSEI F (S {M , 1) <= 80J THEN

#### OPEN " I " , #5, " pressao . dat"

##### DO WHILE NOT EOF(S)

###### FOR I% = 1 TO 25

INPUT #5 , P re s sao (I%)

NEXT I%

##### I F Pressao (U = s (M , U THEN

###### EXIT DO

END IF

LOOP CLOSE #5

#### TudoBem% = 0

I% = 2

DO WHILE II <= 22

#### IF (El / EIS + .0001 >= Pressao(I%)) AND (El / El5 + .0001 ‹=

Pressao 2 + II) ) THEN

## PRE! = ((Pressao(I% + 3) - Pressao(I% + 1)) / (Pressao(I% + 2) - Pressao(I%))) \* ((El / E15) - Pressao(I%)) + Pressao(I% + 1)

TudoBem% = -1

EXIT DO END I F

###### I% = I% + 4

LOOP

IF TudoBem% = 0 THEN

PRINTER . PRINT " Vej a Obse rvacao (\*\*J " ELSE

PRINTER . PRINT USING "######## . #" ; PRE ! ; PRINTER . PRINT TAB{60} ; "mCA"

END I F END I F

PRINTER . PRINT TAB {10) ; "ALTURA DE RECALQUE TOTAL " ;

##### IF CN = 6 THEN

PRINTER . PRINT USING "######## . #" ; H0 + 10 ;

###### PRINTER . PRINT TAB(60) ; "m " ELSEZF CS (I'M, 1) >= 100) THEN

PRINTER . PRINT USING "######## . #" ; H0 + . 'i ;

##### PRINTER . PRINT TAB{60) ; "rrCA"

EL S E

PRINTER . PRINT USING " ##444### . 4" ; H0 + PRE ! ; PRINTER . PRINT TABC60J ; " mCA"

END ZF

PRINTER . PRINT TAB{10) ; "PRESSAO NAXINA ADMI SS IV EL NA ENTRADA . . “ ; I F EN = 6 THEN

PRINTER . PRINT USING "### #### . #" ; 20 ; PRINTER . PRINT TAB(60} ; " rrC "

Pàgï na 27

#### at pi na2

EL 5El F (TudoBem% = - 1} AND (S {M , 1J < 100) WHEN PRINTER . PRINT USING "######## . #" ; 10 ; PRINTER . PRZ NT TAB(60) ; " MCA"

##### ELS EI F CTudo Berr% = 0) AND (s CY , IQ < 100) THEN

PRINTER.PRINT ” Veja Observacao ("”)"

###### ELSEI F S (M , 1) > 80J THEN

PRINTER . PRINT USING "######## . # " ; 1 ;

###### PRINTER . PRINT TAB {60a ; " mCA"

E ND I F

PRINTER. PRINT TAB(10J; ”DIMENSOES EXTERNAS. ” ;

PRINTER . PRINT T (M , 7 ; " X " ; T {M , 8 ; ” x " ; I F ENCH = " SG " OR ENCH — " > 20 " TH EN

I F NC <= 2 TH EN ALTUR = 1

E LS EI F NC <- 3 THE ALTUR — 2

EL S EI F NC <= 5 THEN

A LTUR = 3

END I K

E L S EI F LEFT$ ( ENCH , 1} = "A" THEN I F NC <= 3 THEN

ALTUR = 1

E LS EI F NC <= 4 TH EN A LTUR = 2

E L S EI F NC <= 5 THEN ALTUR = 3

END I F

E L S EI F ENCH = " RT" TH EN ALTUR = 3

END IF

COLUNA = 8 3 “ {ALTUR — 1g + (E13 1) PRINTER . PRINT T §M , COL UNA3 ; "mrs"

PRINTER . PRINT TAB(10J ; " P I GMENTACAO . . . . . ... . . ....

AL PI NA"

PRINTER. PRINT

PRINTER. PRINT TAB(10) i ”MATERIAIS DE CONSTRUCAO: "

PR I NTER . PRI NT

I F (S (M , 18) = 1) AND (Rev% = 0} WHEN rrs g S = TCP , 18 • " — AE"

V ERDE , PADRAO

E L S E

I F Ent ra00l.optBack a (2) . va1 ue = TRUE THEN ms g S = " S upe rJ or : PRF Au to po rtant e" I F Rev% = 0 THEN

EL S E

ms g $ - ms g $ + —"

END I F

###### ms g S = T (M , 18)

AE "

END I F

END IF

PRI NTER . PRI NT TAB 10) ; ” E STR UTURA . .. . . .. . . .. . ... . . ...... ......

PRINTER . PRINT ms g S

###### I P Ent ra001 . opt Bac a ( 2) . Val ue = TRUE THEN

PRINTER . PR ZNT TAB (4 9J ; ” I n fe *r* or : co roa de con c e to "

E ND I F

n S g 6 = ” R E VE ST I MENTO LATERA L . . . . . . . . . . . . . . . . . . " \* T (M , 19)

PRINTER . PRINT TAB¢ 0J ; m s g 3 ;

I r Rev% — 0 TH EN

E LS E

PRINTER. PRIN\*

" AE "

PRINTER . PRINT ""

E ND T F

PR I NTER . PRI NT TAB 10J

###### I P Cs CN , 2) = 1} OR

8) <> " c11ent e } " THEN

" BACIA DE AGUA FRIA . . . (M , 2) - 2 } AND ( (S ¿M ,

18) - i’AND (RIGHT$(Espec4aJ 5,

PRI NTER . PRI NT " PRF " ; I F Rev% = 0 THEN

PRI NTER . PRI NT " — AE ”

E L S E

#### Pfiqi na 28

ELS E

PRINTER. PRINT

END I F

a1 pl na 2

PRINTER.PRINT ”Concreto (pelo Cliente)”

END I F

PRINTER . PRINT TAB( 10) ; " ENCHI BE NTO ” ;

I F EN = 6 TH EN

PRINTER . PRINT "— — ”

ELS EI F ENCH <> " SG " THEN

PRINTER . PRINT "PVC - AE "

E L S E

PRI NTER . PRI NT " POLI PROPI L ENO" ;

#### IF Enira00l.check4.Value = 1 THEN

PRINTER . PRINT " — AE "

E L S E

PRZ NTER . PRINT ""

END I F

ENO IF

PRINTER . PRINT TAB(10J ; " ELI MINADOR E S DE GOTAS .. . . .. . .

PRINTER. PRINT TAB(10); "SISTEMA DE DISTRIBUICAO. . . . .... .

I F EN = 6 TH EN

PRINTER . PRINT *"A r vo r e* de o . C . com AL PICOAT— CT “

PVC AE "

EL 5 E

PRINTER . PRINT T (U , 20J ; I F Rev% = 0 THEN

PRINTER . PRINT " — AE"

EL S E

PRI NTER . PRINT ""

END I F END I F

PRI NTER . PRINT TAB 10J ; "VENTILADOR ” ;

PRINTER. PRINT TAB(49) ; T(M, 21)

IP ((RIGHT$(T(M, 21 E18J, 3) = ”PRF”j OR (RIGHT$(T(M, 21 + E18), Il) ”POLIURETANO")) AND (Rev% = 0) THEN

PRINTER.PRINT TAB(49J; ”PAS DE PRF-AE”

ELS E

PRINTER . PRINT TAB 49) ; T LI , Z 1 + E 18

END IF

PRI NTER . PRINT

I F S {M , 18) — 2 AND PI LARETE <> 0 THEN

###### PRINTER . PRINT TAB (6} ; ” (”g P reve *r* P1 I a r ete cd c1on aI ac ma do N v e c! a Ba cJ a de " ; PI LAR ETE ; " m "

END I F

PRINTER.PRINT TAB(4); " PRF = POLIESTER REFORCADO COM FIBRA DE VlOROi”:

PRI NTER . PRINT " AE = ' AUTO - EXTINGUIV EL ' “

I F Tu do Bem% = 0 THEN

PRINTER. PRINT TAB(4); ”(""j SISTEMA DE DISTRIBUICAO ESPECIAL. FAVOR

CONSULTAR A ALPINA.” END IF

'PRINTER. PRIN\* PRINTER. PRINT CHR%(12) PRI NTER . ENDDOC

EXIT SUB

Ch eckEn *ro r :*

I F ( ERR - 2 5 AND co ntaer r < 2 THEN

MSGBOX " Imp *re* s s o ra de s co nectada ou sem pa pe1 . " • CH R $ ( IOJ + CH R $ ( T 3 r

corrija o problema e continue a execucao

con t aer r = contae *r* r 1

RESUME

OLSEIE contaerr, 1 THEN END ELSE

PRINT " E *r* ro n ume ro ’ STRS ( ERRg END ' A1 n al za o p rog rama

E NO I F

END S UB

##### Pàgind 29

ERROR $

SUB TemBS (L8, L7, L 6)

### al p1na2

’ SUB- ROTINA PARA CAL CULO DA TBS EM FUNCAO DE TBU E UR

’ VARIAVEI S DE ENTRADA : L8=TEMPERATURA DE BULBO UMZDO ( ’ C)

' L 7=UMIDADE RELATIVA {%}

###### ' L6=PRESSAO ATNOS FERICA (rrba r)

'VARIAVEIS DE SAIDA: L9=TEMPERATURA DE BULBO SECO ('C)

' **P 'i= PRESSAO DE** VAPOR SATURADO CON BASE NA TBU ' VARIAVEIS USADAS : **C0=COEFICZENTE**

’ **I1=INCREMENTO** ( ' Cg NA **ITERACAO PARA CALCULO DE TBS**

’ **I2=PRECISAO NA ITE RACAO PARA DETERNINACAO DE TBS**

’ L9=TEMPERATURA DE BULBO SECO ’ C)

’ L10=TENPERATURA DO AR ’ C}

IF L8 < 0 THEN

##### C0 = . 573

**ELSE**

### C0 = . 667

END I F

#### 11 = .1: 12 = .2: Ll0 = L8

##### D0 WHILE 11 > .001

FOR L9 = L10 TO L10 + 30 STEP Z1

PA = 6. 107 S + 10 ^ ( (7. 4412 - ((67 — L8) / 463) ^ 2J \* L8 / (23 5 +

### L8J)

DELTA = 10 ^ ((7.4412 - ((67 - L9J / 463) ^ 2) L9 / (235 + L9)) +

##### {C0 \* L 6 \* 100J / (1006. 7 \* 6. 107 5 \* L7} \* L9 - (P5 \* 100) / (6. 1075 ° L7) - (C0

' L6 \* 100 \* L8) / (1006. 7 \* 6. 107 5 ° L 7)

###### IF ABS {DELTA} < z 2 THEN EXIT FOR

END Z F

NEXT L9

L10 = L9 : I1 = 11 / 10 : 12 = I2 / 10

##### LOOP

ZF Lg = L 10 + 30 THEN

##### PRINT " ERRO NO CALCULO DE TBU" : STOP

###### END IF END SUB

SUB TemBU (L9, L7, L6J

##### 'SUB-ROTINA PAFtA CALCULO DA TBU EM FUNCAO DE TBS E UR 'VARIAVEIS DE ENTRADA: L9=TEMPERATURA DE BULBO SECO ('C) ’ L **7=UNZDADE RELATIVA (B)**

’ **L6=PRESSAO ATNOS FERICA (mba r)** 'VARIAVEIS DE SAIDA: L8=TEMPERATURA DE BULBO UNIDO ('C) ’ VARIAVEIS USADAS : A0=COEFICIENTE

##### ' z1=INCRENENTO É ’C) NA ITERACAO PARA CAL CULO DE TBU

' I2=PRECISAO NA ITERACAO PARA DETERMINACAO DE TBU

' L8=TENPERATURA DE BULBO UNIDO ’ C}

’ L9=TEMPERATURA DE BULBO S ECO ’ CQ

###### ’ L10=TENPERATURA DO AR ( ' C)

I F L 8 < 0 THEN

##### A0 = . 573

ELSE

##### A0 = . 667

L9))

L 8) )

END I F

###### I1 = . 1 : 12 = . 2 : L10 = L9

DO h/HZLE I1 > *. 00!*

FOR L8 = L10 TO L10 - 30 STEP 11

P9 = 6. 1075 \* 10 ^ C(7. 4412 - € (67 L9J / 463) ^ 2) " L9 / €23 5 +

##### P4 = 6. 1075 \* 10 ( (7. 4412 - ((67 — L8J / 463J 2) ' L8 / €23 5 + DELTA - P9 "" L 7 / 100 — ÊP4 — AO \* ÊL9 L8} \* L 6 / 1006. 7)

IF ABS {DELTA) < 12 THEN

EXIT FOR

END IF

NEXT L8

##### L10 = L 8 : T1 = I1 / 10: I2 = I2 / 10

LOOP

IF L8 = LI0 — 30 THEN

##### Página 30

al p1na2

PRINT "ERRO NO CA LCU LO DE TBS " : STOP

###### END IF

END S UB

###### SUB TENP1 (}

' SUB— ROTINA PARA CAL CULAR A T E AIPE RATURA DO

###### ' AR SATURADO EM KUNCAO DA SUA ENTAL PIA

'VARIAVEIS DE ENTRADA: K9-KNTALPIA DO AR SATURADO

' L8=TEMPERATURA IN FERIOR A DES E 3 ADA

###### L6=PRESSAO ATMOS FERICA ¢mbar }

' VAR IAV E I S D E SAIDA : K8=TEMPERATURA DO AR SATURADO ( ’ C) ' VAR IAV E IS QUE USA : DELTA=

##### P4=

K 8}

#### 11 = 1

I2 = 4

#### UO = L8

##### DO GHZ LE 11 > . 001

FOR K8 = L 10 TO L 10 + 30 STEP 11

##### P4 = 6. 107 5 ^ 10 ^ ( (7 . 4412 - ( (67 — K8) / 463 ^ 2) " K 8 / (23 5 •

DELTA = K9 — ( 1. 006 \* K8 + . 62 2 \* P4 / L 6 — P4) ” L25 01. 6 -r t . 9C "

I F ÇABS ÇDE LTA$ < 12 OR ÇDE LTA < 0J THE N EXIT FOR

END I F NEXT K8

### L10 = ‹8 - 11: 11 Il / 10: 12 = i2 / 10

LOOP

END 5 UB

FUNCTION Teo rAg ua (P7 , L 6J

’ CALC ULO DO TEOR 0 E AGUA NO AR UMIDO

###### 'VARIAVEIS DE ENTRADA: L6=PRESSAO ATMOSFERICA (mbar)

P 7= PR ES SAO PARCIA L DE VAPOR NO AR UNIIDO C mb a r )

' SAIDA : L 3 = TEOR DE AGUA NO AR UMIDO ( kg/ k g

L 3 = . 62 2 ” PA / L 6 - P7}

Teo rAg ua = L 3

END FUNCTION

SU B TOL {)

’ SU B — ROTINA PARA CAL CULO DA TOL E RANCIA ' VAR I AV E I S D E ENTRADA :

' MARIAV E I S OE SAIDA : TI — E 3

U9 - D

’ DS = 100

D = D U8 = E 5 T7 - . 4

I K D 5 < 100 THEN

V9 - - 1

##### T7 = T7 ' V9

E LSE

#### V9 1

END I F

DO



Descrd cao : Di <s nu1 cao do decremento de T2 para hai xor aooroaches

at raves da rre d a com a TBU

PO P ” C 0M Dat a : 1 5 . I2 . 94

V9 - - 1 AND T2 ‹— E8 + . 4 THEN T2 — (+2 + E 8 / 2

TO = T2 + E 3 - E §

ELSE



#### Pág1 na 31

al pJ na2

T2 - T2 + T7

END I F

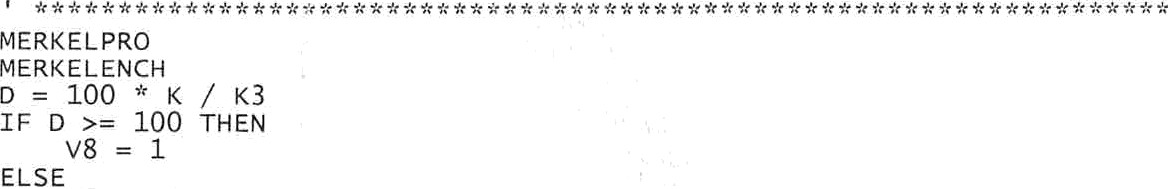
I F V9 = — 1 AND T2 < E8 + . 0 5 THEN U7 = E8 — E 5

### al ert a to = —1

EXIT DO END IF

LOOP

# v8 -1

END I F

IF V8 <> v9 THEN

EXIT DO END I F

iJ 8 = T2 U9 = D

###### I F at e rtatol <> - 1 THEN

u6 - (u8 - T2) / (U9 — D)

U S = U8 - U6 ” U9

###### U 7 - U 6 “ 100 + U § E 5

END I F T1 = E 3 T2 = E 5

BE RK EL PRO

PERK E L ENCH

###### D = 100 ” K / K 3

END S UB

FUNCTION UR (P5, P?)

'CALCULO DA UMIDADE RELATIVA DO AR

'VARIAVEIS DE ENTRAOA: PS=PRESSAO DE VAPOR SATURADO, COM BASE TBS

P Z= PR E S SAO PARCIA L DE VAPOR (mba r ) ’ SAIDA : =UMIDAO E RELATIVA DO AR {%}

L7 = PA / P 5 " 100

UR = L 7 END FUNCTION

SUB USUAL () VARIAVEIS DE ENTRADA

'VARIAvEIS DE SAIDA:

E2= E3= E 5=

E 7= E8= EI6= EI8= E20-

E2 1—NUMERO MINIMO DE CELULAS ENCH=NON E DO ENCHINENTO

CLI-RAZAO SOCIAL DO CLIENTE NOM— NOME DA P ES SOA PARA CONTATO FAX=FAX DA PES SOA PARA CONTATO

E L -T E L E FON E DA P E S S OA PA RA CONTA TO

END

OPE N " I " , # 5 , " U SUA L . DAT "

T N P UN # 5 , E 2 , E 3 , E 5 , E 7 , F 8 , z I C , E B , 2 O , E 2 I , E 2 2 , D a S

I N PUT # 5 , E NC H , Ro d O% , R e vÜ , C l. I , NOU , FAX , T E L C LO S E # 5

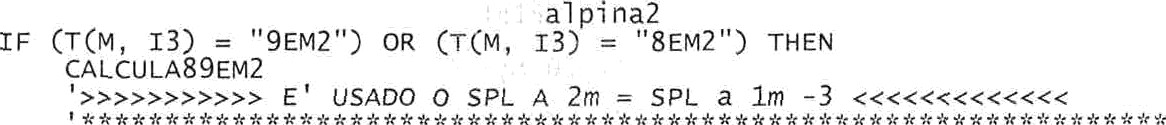
S UB

SUB

VENTILADOR (j

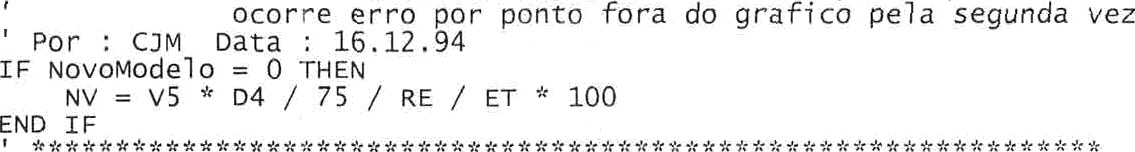
A1 e rtü% = 0 13 = E 18 • 1

Púg1na 3 2



Rev s ao : 2

' Descricao O calculo de Nv deve ser realizado apenas quando nao



SPL = 10 “ LOG {UA 4 ” NV / S {N , 7$ ” NP§ / LOG ( 10) — 5

SPL = INT S P L + . S

I F T (< , 13 = " 8 EM2 " TH EN S P L = S P L — 3

E LS E I F (T{M , 13 = " VAP ”) OR (T {M , 13 = "VA L" ) TH EN

I F ¿V 5 >= VAP S {PI , 13 + 17) , 7) ) AND (A1 e rta% = 0J THEN

CA L CULAVA P

NV = VA P (S {M , 13 + 17J , 6) / ET

' >>> >>> >> >>> E ' USADO O S PL A 2m—5 P L A 1m— 3 <<< <<<<< <<<<< <<

UA = ROTV EN / 60 ” 3 . 14 15 9 \* s (M , 7 g ' VE LOCIDADE PERIFERICA AN = VAP {S (M , 15 + 17} , 8J

S PL — 10 \* LOG (!JA 4 " NV / S (M , 7) \* NP} / LoG ( 101 ) 3

S PL = I NT S P L . 5 )

ELS EI F (V 5 < VA P (S (II , 13 + 17) , 7) AND (ml e rta% = 0J THEN

E L S E



SD = 1 . 5 ° D4

##### ml erta% = — 1

NV = MOT / 1 . 1 SD = 1. 5 " D4 STOP

END I F

END I F

NV1 = MOT / NV

END S UB

###### Pãg na 3 3