

DfcV`Ya mXcVcfi `c[fUb]Vmb]_Ck `dfnYd] `Xc`cVWfcbmi fn XnY `
Y`Y_hfnVmbmV`]Y`Y_hfcb]VmbmV`k `cV]Y_HUW`Vi Xck `UbmV`fP&
NXcVngUk : `]gck g_]ž`8ca]b] `?fUgck g_]`

G_i hYVmbU`cVWfcbU`]bghU`UW]`Y`Y_hfnVmbmV`cX`dfnYd] `Uha cgZYfnVmbmV`k na U[U`
i k n[`Xb]Yb]U`k gnmgh_]V`a c `]k mV`dfnmU`UX_Ck `cXXn]U`nk U `d]cfi bck mV`]!`
nUY`b]Y`cX`dfnYk]Xnk UbmV`g_i h_Ck `!`k ū V]k Y[c`XcVcfi ž`_ccfXnbUW]`]`
a cbHU`i `fcX_Ck `cVWfcbm`8c`dcXghUk ck mV` `fcX_Ck `cVWfcbmi!`cVc_`
Y_fUbck Ub]U`]Y`ja]bUW]`d h`]!`bUY` `i fn XnYb]U`Xc`c[fUb]Vmb]U`dfnYd] `
fGD8Ł`"DfUk]Xčk U`]V`Ud`]UWU`^Ygh`dck U bna `dfcV`Ya Ya ž`_hCfmk nb]_U`n`
fC`bnV`dfnmVmbž`b]Y`k nū VmU^`VWfU_i `c`b]V`dYbY`ž`fnYH`bY^`]dck]YfXncbY^`
k nb]_Ua]`VUXU`]bZcfa UW]`cfUn`a m`VW`cZYfh`bU`hYa Uh`b]YghUbXUfXck mV`
fcnk]`nU`_ca V]bck UbmV`"K`Uf]m_i`Y`ghUfUbc`g]`^Y`ca`Ck`]`bU`hY`k`nb]_Ck`
dfnYdfck UXncbnV`VUXU`]gZcfa i čk U`dcghi`UhmXc`fenk U Yb]U`k`dfUWV`
bcfa U`]nUWmbmV`_ca]hYhCk`H7`"+=97`]GF`"+5`79B9@97`"

C[CebY`i k Ufi b_ck Ub]U

.....I fn XnYb]U`Y`Y_hfnVmbY`]Y`Y_hfcb]VmbYž`ghUbck]`V`k mdcgU`Yb]Y`k`gdC`mYgbmV`
cV]Y_hCk`Vi Xck`UbmV`ž`g`VčfUn`VUfXn]Y^k fU`]k Y`bU`d]cfi bck Y`nU`_C`V`b]U`
Y`Y_hfca U[bYmVmbY`]n`fY[i ūmk na U[U^`cVWfcbmicX`dfnYd] `Uha cgZYfnVmbmV`"K`ū`b]Y`hU`
Xi`U`k`fU`]k`c`gd`fUk]Už`Y`XYWm`U`c`dchfnYV]Y`ghc`gck Ub]U`cVWfcbmidck]bbU`Vm`
dcXY`a`ck`UbU`k`mū`Vmb]Y`k`cdUfV]`c`UbU`]n`fmm`U`gn`_Ck`d]cfi bck mV`%`C`bU`hca]Ugh`
_fm`hYf]U`cdUfhY`bU`dcn]ca`UW`]nc`YfUi`b]VmbmV`Q`Q!`dck]bbmVm`i`nbUbY`nU`nVn`h`
UfVU]VmbY`]cXfni`VčbY`Q`Q`B]Y`a`c`bU`Vck]Ya`g]`n[cXn]`n`VYnhfcg_]a`dfnY`cbUb]Ya`c`
V`ck`c`V`fYnm[bUW]`n`cVWfcbmi]bghU`UW]`Y`Y_hfnVmbmV`cX`dfnYd] `Uha cgZYfnVmbmV`hUa`ž`
[Xn]Y`]VmbU`Xb]`Vi`fnck`mV`k`fc_i`^Ygh`a`b]Y`gnU`b]`&)"@]VmbU`hU`U`XchmVmb]Ya`U`VWU[c`
bUgnY[c`_fU`i`ž`Vč`k`dfU`hmV`gd`fck UXnUč`Vm]g]`Xc`dcnVUk]Yb]U`fcX_Ck`cVWfcbmi`
dfnYd]`Včk`Y^`dfU`hmVmb]Y`k`gnmgh_]V`cV]Y_hCk`ž`U`hc`Vmc`Vmb]Y`hm_c`cV`h`nk]gma`
bcbgYbgYa`ž`YV`fCk`b]Y`g`UbXU`]Vmbma`dchfU`hck`Ub]Ya`c[fca`bY[c`nU[fc`Yb]U`mVU`
i`Xn]`]V`a`]Yb]U`"

.....=bghU`UWY`Y`Y_hfnVmbY`k`fUn`n`dfnmū`Vmbma`Xc`b]V`k`mdcgU`Yb]Ya`Y`Y_hfnVmbma`]`
Y`Y_hfcb]Vmbma`a`c[`Vm`VWfcb]cbY`cX`dfnYd] `Uha cgZYfnVmbmV`fC`bma`]gdcgcVUa`]`
BU`Y`mXc`b]V`Y`fUbck`Ub]Y`nU[fc`cbmV`cV`k`cX`Ck`]V`dca`]YgnV`Y`ž`cX`dck]YXb]`Xc`V`C`
hfUg`cV`k`cX`Ck`fY`]a`]bUWU`d`h]čž`bc`]cV`h`nk]`V`Y`ghc`gck Ub]Y`dcū`V`Y`k`mf`Ck`bUk`V`mV`ž`U`k`
hma`i`fn`XnY`Xc`c[fUb]Vmb]U`dfnYd] `fGD8Ł`%`*`C`nk`UbmV`hY`c[fUb]Vmb]_Ua`]dfnYd]`
i`V`_fC`h`c`c[fUb]Vmb]_Ua`]`HY`cg`hU`b]Y`fcX_]`a`U^`df]cfmY`hck`fUb[`]nU`a`i`^`V`c`čk`
dcnmV`k`Y`k`gnmgh_]V`dfnmU`UX`_UW`cVWfcbnž`dcV`mbU^`WcX`a`]Y`gW]`k`dfck`UXnYb]U`
]bghU`UW]`Xc`cV]Y`h`i`ž`U`_c`V`W`bU`bU`k`m`gnma`ghc`db]i`d]cfi bck Y`ghfY`ZmicVWfcb`bY`^`f@DNŁ`
%`C`C`&`\$`Q`K`gnmgh_]Y`Vck]Ya`k`dfck`UXnUbY`Xc`cV]Y`h`i`]bghU`UWY`dfnYk`cXn`V`dck]bbm`
Vm`cV^`hY`gnmgh]Ya`Ya`dcū`V`Y`k`mf`Ck`bUk`V`mV`ž`Xc`_hC`fmV`bU`Y`nUf`Ck`bc`dcū`V`Yb]U`
dfnYk`cXck`Y`V`Yndc`fYXb]Y`%`&`C`^`U`_]dcū`V`Yb]U`Xc`_cbnk`UbY`nU`dca`cW`c[fUb]Vmb]_Ck`
dfnYd]`%`*`C`&`%`Q`Dcū`V`Yb]U`hY`bU`Y`Xc`dfcW`Xi`f`dfnYk]Xn]UbmV`k`fUa`UW`i`fn`XnYb]U`
d]cfi`bcVWfcb`bY[c`f@DGŁ`%`C`%`+`C`%`-`Q`]k`fUa`UW`dfUk]Xčk`c`fYU`]nck`UbmV`]bghU`UW]`
Y`Y_hfnVmbmV`Q`C`%`\$`C`%`%`C`%`&`C`"

.....NUdYk`b]Yb]Y`dcghi`ck`UbY[c`dcn]ca`i`g_i`hYVmbc`V`GD8`k`na`U[U`dfUk]Xčk`Y[c`]V`
XcVcfi`]`]bghU`ck`Ub]U`n`nUW`ck`Ub]Ya`nUgU`_ccfXnbUW]`k`nU`Ya`bY^`]`_ccfXnbUW]`n`
VWfcb]cbma`i`fn`XnYb]Ya`"?`ccfXnbUWU`dck]bbU`gdY`b]U`nUf`Ck`bc`k`Ufi`b_]`bUd]`Včk`Yž`^`U`
]k`Ufi`b_]`YbYf[YmVmbY`%`C`%`*`C`&`\$`Q`DcXghUk`ck`na`k`Ufi`b_]`Ya`bUd]`Včk`na`^Ygh`
i`hfnma`Ub]Y`bU`nUW]g`_UW`GD8`]bU`VWfcb]cbma`i`fn`XnYb]i`bUd]`VU`c`k`Ufhc`V`b]Y`k`]`_gnY^`
b]`k`Ufhc`k`mVfUbU`X`U`XUbY[c`dfnmU`UX`i`n`]ghmidfY`ZYfck`UbmV`k`Ufhc`V`bUd]`Včk`Y[c`
dcn]ca`i`cVWfcbmi`d`"N`_c`Y]dcXghUk`ck`na`k`Ufi`b_]`Ya`YbYf[YmVmbma`^Ygh`

b]YXcdi gnVb]Y'Xc' dfnYd'urk i' dfnYn'GD8'] dfnYn' i' fn' XnYb]Y' V'fcb]cbY' df' X' i' XUfck mV' =]a' d' f'c' _gnhU'V' %\$#) \$']' =a' U' f'c' _gnhU'V' , #&\$'c'fUn' d'f' X' b'Ugh d'V'mV' =Z'c' k' Ufhc' V]U'V']' V'uG'U'V' h'f'k' Ub]U'k']' _gnm'V' b']' h'z' d'f'nm' _h'f'f'm'V' a' c' ['U'V'm'V'm' d'f'ny' _f'c'V'm'cb'U' Xcdi gnV'U'b'U'k' Ufhc' ' !' h'f'U'V'z'b'Y'^k' h'm'V' i' fn' XnYb]U'V' !' Y'bYf[]]'K' a' U' "

.....K' Ufhc' V]Xcdi gnV'U'b'm'V' b'Ud] ']' d'f' X' a' i' gn' V'm' i' gh'U'Ub'Y'n[c'X'b]Y'n'Y' _gdY'f'W]'a' d'c'X'Y'^ V]Y'a' X'c' d'c'gh'U'b'c'k']Y' k' U' V]k' m'V' b'c'f'a']' d'f'ny'd]g'f'f' 'O'&'O' 'O'&'O'&'O' 'O'&'O' 'O'&'O'&'O' D'c'h'f'n'Y'V'b'U' h'Y' 'Y'gh'Y' _gdY'f'W' _]b'h'Y'f'd'f'Y'h'U'W'U' n'U'g'U'X' X'c'V'c'f'i']']b'gh'U'c'k' Ub]U'GD8'z' [X'm' a' i' gn' V'm' c'b'Y'Z'U'V'c'k' c' X'c'g'h'c'g'c'k' Ub'Y'X'c'k' U'f'i' b' _f'f' 'c' _U' b'm'V' "8Y' _U'f'c'k' Ub'Y'V'c'k']Y'a' d'f'ny'n' d'f'c'X'i' V'b'h'f'f' d'U'f'U'a' Y'h'f'n'z' V'U'f'U' _h'Y'f'm'g'h'm']']b'gh'f'i' _V]Y' a' c'b'h'U'c'k' Y'g' h'i' V'U'f'X'n'c'k' U' b'Y'z' U'Y' b]Y'n'U'k' gn'Y'k' m'g'h'U'f'V'm'U'^ V]Y' "7'c'k']' V]z' V'U'f'X'n'c'k' U' b'Y'Y'gh'z' V'm' d'c'X'U'k' Ub'Y' d'f'ny'n' d'f'c'X'i' V'b'h'f'f' GD8']b'z'c'f'a' U'W'Y' V'm'm'k']U'f'm[c'X'b'Y'z' U'h'c' !' 'U' _g] 'c' _U'ni' Y' !' b]Y'n'U'k' gn'Y' a' U' a']Y'g'W' "7\c'X'n] h'i' b]Y' h'm' _c'c'k' U'f'hc' V]d'c'X'gh'U'k' c'k' m'V' d'U'f'U'a' Y'h'f'f' GD8'z' U'Y' f'f'f' b]Y' 'c']V] h'm'd'm]k' U' V]k' c' V] '6'nk' U' b'd' "h'U'z' Y' .

! X'U'b'Y' b'U' h'U'V']V' _U'V' n'b'U'a']c'b'c'k' m'V' 'GD8']X'c'u' V'm'U'b'm'V']b'gh'f'i' _V] b]Y'g']X'Y'b'm'V'b'Y']' k' m'g'h'U'f'V'm'U'^ V]Y' /

! a']Y'f'n'c'b'Y' b'Ud] V]U'c' [f'U'b]V'm'U'b]U'g' b]Y'f'Un'k' m'gn'Y' b] 'X'Y' _U'f'c'k' Ub'Y' d'f'ny'n' d'f'c'X'i' V'b'h'U' d'c'n]c'a' m'ic'V'f'c'b'm' /

! 'GD8' i' Y[U^ i' gn'c'X'n'Y'b]i' d'c'X'k' d'urk' Y'a' d'f' X' i' XUf'c'k' m'V' b] 'gnm'V' b] 'X'Y' _U'f'c'k' Ub'Y' d'f'ny'n' d'f'c'X'i' V'b'h'U' i' V' d'c'X'k' d'urk' Y'a' d'f' X' i' b'U'gh' d'V'm'V' /

! 'GD8' b]Y' g'd'Y'U'b]U'^ X'Y' _U'f'c'k' U'b'm'V' k' U'f'i' b' _f'f' _c'c'f'X'n'b'U'V'm'b'm'V' /

! V'f'U' _Y'gh' d'f'ny'f'n'm'g'h'c' V]]g'd'f'c'bc' V]Y'a'] X'n'm'X'Y' _U'f'c'k' U'b'm'a']]f'n'Y'V'm'k']g'm'a']X'U'b'm'a']z' X'c'h'm'V' V'm'a']h'm'd'f'f'z' _U'g' d'f'c'V]Y'f'V'm'V']n'U'g'U'X' c'f'Un' n'U'g] [i' X'n]U'U'b]U'GD8' "

.....K' g'n'm'g'h' _c' h'c' g'd'f'U'k']U'z' Y'k' n'V'f'f' b'U'V'U'f'X'n]Y'^c'X'd'c'k']Y'X'b]V]g'd'c' f'f'f' c'z'Y'f'c'k' U'b'm'V' b'U' f'n'b' _i' i' fn' X'nY' X'c'c' [f'U'b]V'm'U'b]U' d'f'ny'd] 'Y'gh'V'U'f'X'n'c' h'f'i' X'b'm' : c'f'a' U'b]Y' f'n'Y'V'm'V]c'f' W' _U' X'm' c' [f'U'b]V'm'b] _Y'gh' d'f'ny'd'f'n' X' _c'k' U'b'm'X'c' ^Y'X'b'Y'^n' h'f'n'Y'V] _U'g' d'f'c'V]Y'f'V'm'V' f'f'z' =i' V' =f']' n'U'k' U']z' _c'k' U'b'm'X'c' ^Y'X'b'Y' c' n' h'f'n'Y'V] h'm'd'f'f'z' d'c'k'] n'U'b'm'V' V]Y' Y'n' _U'g'U'a']d'f'c'V]Y'f'V'm'a'] "G' h'c'GD8' h'm'd'i' %z' h'm'd'i' &]' h'm'd'i' " "7'c'f'Un']V'm'b]Y'^Y'X'b'U' _g' c'z'Y'f'c'k' Ub'Y' h'm' "c' [f'U'b]V'm'b] _] _c'a' V]b'c'k' Ub'Y' i' V' _g'c' _U'f'n'c'b'Y'z' _h'f'f'f'a' b'U'X'U'Y'g] 'k' g'd'c'g'f'f' b]Y'gh'U'b'X'U'f'X'c'k' m'k' U' V]k' c' V] X'k' i' i' V' b'U'k' Y'h' h'f'n'Y'V] h'm'd'f'f' ^Y'X'b'c'V'm'Y' b]Y'c'f'Un' b]Y'gh'U'b'X'U'f'X'c'k' Y'c'n'b'U'V'm'Y'b]U'z' a' m' W' h'Y'b'X'Y'b'V'm'b]Y' i' V' d'c'X' k']U'X'c'a']Y' h'm'd'GD8' n' ^Y' [c' _U'g' d'f'c'V]Y'f'V'm' "9ZY' h'Y'a' h'Y' [c'g' h'm' "GD8' h'm'd'i' z' =]' h'm'd'i' z' z' z' z' z' U'k' Y'X'u' ['k' V'm'Y' b]Y'g'n'm'V' c'n'b'U'V'm'Y' 'GD8' h'm'd'm'6z'7']' h'm'd'i' 6z'7z'8z' n'k' Ub'Y' b]Y']Y'X'm'X'k' i' !]' h'f'f'f'g'h'c'd'b]c'k' m'a']"

.....; X'm'a' f'f']g] 'c'GD8' h'm'd'i' %z' h'c'c' [f'f'f']Y'k']U'X'c'a' c'z' Y' ^Y' [c'X'c'V'f'f' ^Y'gh'i' n'U'Y' b]c'b'm'b]Y' h'm' _c'c'X' i' fn' X'nY'b]U'V'f'c'b]cb'Y' [c'z' U'Y']'c'X'k' U' V]k' c' V]V]U'Y' [c'c'V'k' c'X'i' V'f'c'b]cb'Y' [c" B'U'h'c'a']U'gh'z' [X'm'k' d'f'c'k' U'X'n'U'g] 'GD8' h'm'd'i' z' z' z' h'c' i' k' U' U'g] b]Y'g'u' g'n'b]Y'z' Y'c' ^Y' [c'X'c'V'c'f'n'Y' X'Y'V'm'X'i' ^ h'm' _c' d'U'f'U'a' Y'h'f'm'i' fn' X'nY'b]U'V'f'c'b]cb'Y' [c'z' U'k' U' V]k' c' V]c'V'k' c'X'i' V'f'c'b]cb'Y' [c'b]Y' a' U'^ 'f' n'b'U'V'm'Y'b]U' " >Y'gh' h'c' X'cdi gnV'U'b'Y'z' ^Y' Y']'d'U'a'] h'U'g] z' Y'GD8' a' U'V'm' n'U']b'gh'U'c'k' U'b'm' V]g' _c' n'U'V]g' _f'f' k' Y^ V]c'k' m'V' i' fn' X'nY'b]U'V'f'c'b]cb'Y' [c" >Y' Y']'c' h'm'a']g] 'n'U'd'c'a']b'U' i' V' k']U'X'c'a']Y' X'cdi gnV'U'X'i' 'c'X'Y' [u'c' z' h'c' d'c'd'Y'U'b]U'g] 'k']Y' _]V'u' X' i' V' b]Y'f'n'Y'h'Y' b'c' " =g'h'b]Y'b]Y' X'f'i' []Y' [c'g'h'c'd'b]U'k' g' _c' _U'f'n'c'b'm'a' 'GD8' h'm'd'i' z' z' = h'f'U'V]g'k' f'f'g'Y'b'g'z' [X'm' ^Y'gh'c'b' c'X'Y' [u'nic'X' V'f'c'b]cb'Y' [c' i' fn' X'nY'b]U' "N'k' m' _Y'k' f'f' V'm'U'g' b'U' n'U'V]g' _U'V' k' Y^ V]c'k' m'V' h'Y' [c' i' fn' X'nY'b]U' b'U'gh' d'i' ^Y' f'c'X'k' d'urk' Y'a' g'd'f'n' Y']b'X'i' _V'm'b'm'V' k' n'f'c'g'h' b'Ud] V]U'] ^Y'gh' k' m'a' U[U'b'm'h'U'a' X'c'X'U'h' _c'k' m'GD8'z' X'c'V'f'n'Y' _g' _c'c'f'X'n'b'c'k' U'b'm' b'Ud] V]c'k' c']Y'b'Y'f' [Y'h'm'V'b]Y' n'U'f'f'f' b'c' n'd]Y'f'k' g'n'm'a' 'GD8'z' ^U']'n' i' fn' X'nY'b]Y'a' V'f'c'b]cb'm'a' "

.....8'Ub'Y' d'f'c'X'i' V'b'h'f'f'z' X'c'h'm'V' V' b]Y' _h'f'f'f'V' GD8' h'm'd'i' z' z' =g' 'a' U'c' d'f'Y'V'm'm'b'Y'z' U' d'f'ny'n' h'c' X'c' d'c'X'Y'f'n'U'b'Y'z' n'k' U'g'n'V'm'U'k' d'f'n'm'd'U'X' _i' c' [f'U'b]V'm'b] _f'f' V'Y'n]g' _]Y'f'b] _c'k' m'V' f'b]Y' n'U'k']Y'f'U'^ V'm'V' ^Y'Y'a' Y'b'h'i' i' V]b'U'^ V] [c'l" B'U'h'c'a']U'gh'c'z'Y'f'c'k' Ub]Y'GD8' h'm'd'i' z' z' z' = ^Y'gh'z' n'X'U'b]Y'a' U'i' h'c'f'f'f'z' k' c' [f'f'f']Y'd'c'f'c'n'i' a']Y'b]Y'a' z' d'c'Y' [U^ V'm'a' b'U' d'c'a' m'Y'b]i' g'h'c'd'b]U'c'V'f'c'b'm' n' _U'g' d'f'c'V]Y'f'V'm' 'GD8' "H'f'i' X'b'm' ^Y'gh' h'Y' X'c' d'c' ^ V]U' n'U'f'f'f' b'c' g'U'a' V]Y']g'h'b]Y'b]U' h'f'n'Y'V]Y' [c' g'h'c'd'b]U'k' ^Y'X'b'm'a' 'GD8'z' ^U']'g'd'c'g'f'f' ^Y' [c' f'Y'U']n'U'V]z' U'g'd'Y'U'b]Y'b]Y'k' m'a' U[U' d'f'c'V]Y'f'V'm'V' _U'g'm' =d'f'ny'n'GD8' h'm'd'i' z' z' z' =c'n'b'U'V'm'U' ^Y'X'b'c'V'm'Y' b]Y'g'd'Y'U'b]Y'b]Y'k' m'a' U[U' d'f'c'V]Y'f'V'm'V' _U'g'm' =]' =]' b]Y' b'U'Y' m' h'Y' [c'Y' _g'd'c'b'c'k' U' z' U' h'm'a' V'U'f'X'n]Y'^k' m' _c'f'n'm'g'h'm'k' U' k' f'Y' _U'a' U'V' X'c' i' n'U'g'U'X'b]Y'b]U'k' m'gn'Y'^V'b'm'i' fn' X'nY'b]U'V'Y'n'na']U'b'm' ^Y' [c' ^U' _c' V] 'B'U' d'c'X'gh'U'k']Y'

i Xcgh db]UbmVX`XUbmVX`hU`jY[c`GD8`hfi Xbc`Yghik`b]Y`hCEfmVX`dfnmdUX_UVX`i ghU`]`nUgUX`
Y[c`Xn]UUb]Uz`U`Ygh`cbU`VUfXnc`]ghc`bU`X`U`bUVnk`Vmi`V`nU]bhYfYgck UbY[c`dfc`Y`hU`bH`
cV`fcbmidfnYd]`V`ck`Y`z`_`hCE`mb]Y`a`c`Y`a`]Y``UXbmVX`k`hd`]k`c`V`Ud`_]`UV`mbmVX`]`dck`]b]Yb`
Xmgdc`bck`U`gV`Ya`UhYa`k`mU`b]U`V`Vra`Xc`_`UXb]Y`nUgUX`Xn]UUb]U`GD8`"HY[c`hmdi`XUbmVX`
b]Y`a`c`bU`dfnYV`Y`]`XYb`mz`_`ck`U`n`XU`bma`]`dfc`V`g`CE`h`YV`bc`c`[`]`V`mbmVX`]`cV`Y`a`ck`U`
hU`Ya`b]W`_`Ub`X`ck`"K`mXU`Y`g]`z`]`k`]bhYfYg]Y`dfc`Xi`V`bH`U`Y`gh`hc`z`V`midfn`m`nU`_i`d]Y`]
ghc`gck`Ub]i`GD8`b]Y`i`hfn`ma`nk`U`um`g]`k`mgh`di`^`V`c`V`Y`V`b]Y`k`hd`]k`c`V`z`i`fU`ghU`^`V`i`Xc`
fUb`[]`_`cbZ`_`hi`h`YV`bc`c`[`]`V`mbY[c`O`Q`8`chmV`cbY`b]Y`hm`_`c`GD8`hmdi`_`Z`_`Z`_`_`z`_`YV`
f`CE`b]Y`!`^`U`_`i`k`gdca`b]Ubc`!`k`U`fm`ghc`fck`mVX`GD8`hmdi`_`Z`_`Z`_`b]Y`nUk`]YfU`^`V`V`Y`Ya`Ybhi`
i`V`bU`^`V`[c`"NU`X`c`Xn]`k`c`[`CE`Y`d`m`h`Ub]Y`z`V`mi`Y`gh`a`c`]`k`Y`i`hfn`ma`Ub]Y`dUfUa`Y`h`f`CE`GD8`hmdi`
%`dfn`midfn`Y`_`gn`hU`V`b]i`[`c`k`GD8`hmdi`_`Z`_`Z`_`=V`Y`n`nU`ghc`gck`Ub]U`k`b]a`Y`Ya`Ybhi`i`V`bU`^`V`[c`"
Hfi`Xbc`gcV]Y`k`m`cV`fUn]`z`V`mk`cV]Y`_`V`Y`k`m`dcgU`cbma`k`i`fn`XnYb]Y`d]c`fi`bcV`f`cb`bY`f`l`@`DG`z`
[`Xn]Y`ghc`gck`Ubmi`Y`gh`d]Y`fk`gn`m`gh`cd]Y`c`V`f`cb`m`z`_`gd`Y`Ub]U`^`V`nk`ma`U[`Ub]U`dfcV]Y`f`V`Y`_`U`gm`i`z`
a`c`bU`V`m`c`]`bghU`ck`U`c`[`fUb]V`mb]`_`V`Y`n]g`_`Y`fb]`_`ck`m`

....5Vmik`mU`b]`h`Y`k`hd`]k`c`V`z`_`dcgh`Ubck`]`cbc`dfn`Y`dfck`UXn]`c`X`dck`]Y`X`b]Y`V`UX`Ub]U`
`UV`cf`U`h`c`f`m`b`Y`"K`U`f`m`_i`Y`d`fn`Y`X`gh`U`k`]`cbc`]V`X`k`mb]`_`]`g`z`c`fa`i`_`ck`Ubc`c`X`dck`]Y`X`b]Y`k`b]`cg`_`"
NUgUXb]V`mU`V`m`V`UXU`n`c`gh`U`U`k`m`_`cb`Ub`U`k`b]Y`n`U`Y`b`ma`UV`cf`U`h`c`f]i`a`U`f`Y`X`n`t`ck`U`b`ma`
HYV`b]V`mbY[c`i`b]k`Y`fg`n`h`Y`i`_`=a`Y`b`U`i`f`H`I`_`z`_`z`_`dfn`m`i`i`ghU`!`?`]fV`X`_`c`Z`Z`G`h`f`U`E`Y`%`z`_`_`_`*`_`_`_`
`=a`Y`b`U`i`z``B]Y`a`V`m`i`

....5i`h`c`f`n`mid`f`U[`b`_`dc`Xn]`_`ck`U`k`h`ma`a`a`]Y`g`W`DU`bi`D`fc`Z`X`f`"b`":`f`U`b`_`ck`]`6`Y`f[`Y`f`ck`z`_`
`Y`f`ck`b]``ck`]`C`X`Xn]U`u`5`d`U`f`U`h`CE`k`]i`fn`XnY`bU`K`m`Xn]U`Y`_`=b`mb]Y`f]]`9`Y`_`h`f`m`V`mb`Y`^`]
`=b`z`c`fa`U`h`m``]`H`I`_`z`_`n`U`i`a`c`]k`]Y`b]Y`d`fn`Y`dfck`UXnYb]U`V`UXU`c`f`Un`DU`bi`]b`"X`md`"Y`b`g`ck`]
G`V`X`"b`U`i`n`7`9!`@`5`6`;`a`V`<`D`f`_`Z`h`Y`b`h`f`i`a`]`DU`b]`]b`"X`md`"5`b`^`A`U`f`g`V`U`"n`C`X`Xn]U`u`5`d`U`f`U`h`CE`k`]
i`fn`XnY`h`I`_`=n`U`d`fn`Y`dfck`UXnYb]Y`V`UXU`]i`Xcgh`db]Y`b]Y`]V`X`k`mb]`_`CE`k`"

**7\`U`f`U`_`h`Y`f`n`g`h`m`_`U`V`UX`U`b`m`V`X`GD8`8`c`V`UXU`k`m`V`f`U`bc`dc`h`f`n`mid`f`CE`V`_`]`c`[`f`U`b]V`mb]`_`CE`k`n`
V`h`Y`f`Y`V`X`f`CE`b`m`V`X`Z]`fa`c`Z`Y`fi`^`V`V`V`X`g`k`c`Y`k`n`f`c`V`m`b`U`d`c`g`_`]a`f`m`b`_i`z`U`a`]U`b`ck`]V`Y`n`Z]`fa`m`
C`6`C`6`9`H`H`9`F`A`5`B`z`9`H`_`DC`@`5`A`f`9`H`_`H`9`7`z`_`A`C`9`@`@`9`F`9`@`7`H`F`_`7`]`8`9`<`B`/`G`x`<`B`9`c`f`Un`Y`X`b`
d`f`CE`_`n`Z]`fa`m`@`9!`H`F`C`B`"D`f`n`m`k`n`V`c`f`n`Y`_`]Y`f`ck`U`bc`g]`a`c`]k`]Y`X`i`f`CE`k`b`c`f`n`X`bc`V`Y`V`V`V`X`
V`X`U`f`U`_`h`Y`f`m`i`^`V`V`V`X`GD8`n`d`c`g`n`V`m`Y[`CE`b`m`V`X`Z]`fa`]`f`U`b[`z`_`^`_`c`[`f`U`b]V`mb]`_`]h`Y`n`U`a`i`^`k`
c`V`X`f`cb]Y`b]g`_`cb`U`d]`V`ck`m`V`X`]b`ghU`U`W`]c`X`d`fn`Y`d]`z`U`hU`_`Y`n`U]bhYfYgck`Ub]Y`a`n`Y`g`h`f`c`b`m`
d`f`c`Y`_`h`U`b`h`CE`k`h`m`V`X`]b`ghU`U`W`]"G`_`cb`V`b`h`f`ck`U`bc`k`]`W`i`k`U[`b`U`c`[`f`U`b]V`mb]`_`U`W`h`m`d`i`_`Z`_`=`]b`U`
V`i`X`n`V`ra`d`Y`k`b`Y`_`cb`h`f`ck`Y`fg`Y`c`[`f`U`b]V`mb]`_i`h`m`d`i`_`Z`_`Z`_`_`="D`c`X`gh`U`k`c`k`Y`X`U`b`Y`k`m`V`f`U`b`m`V`X`
c`[`f`U`b]V`mb]`_`CE`k`z`n`U`V`n`Y`f`db]`h`Y`n`h`U`V`]V`m`Y`_`n`b`U`a`]`c`b`ck`m`V`X`]n`_`U`h`U`c`[`CE`k`z`n`c`gh`U`m`n`Y`gh`U`k`]`c`b`Y`k`
h`U`V`]V`m`i`%"B`U`Y`m`n`U`i`k`U`m`z`_`Y`b]Y`k`g`n`m`gh`_`]Y`X`U`b`Y`g`X`c`gh`db`Y`k`h`m`V`X`f`CE`U`V`X`z`_`V`z`
c`V`m`k`]`V`Y`g`h`U`b`ck`]c`X`gh`d`g`h`c`c`X`d`c`gh`U`b`ck`]Y`_`*`%"&`b`c`f`a`m`O`+`CE`U`hU`_`Y`z`_`Y`k`b]Y`_`h`CE`f`m`V`X`
d`f`n`m`d`UX`_`UV`X`X`U`b`Y`n`U`V`n`Y`f`db]`h`Y`n`f`CE`b`m`V`X`f`CE`Y`u`b]Y`g`_`]X`Y`b`h`m`V`mb`Y`"**

TABLICA 1. Zestawienie parametrów badanych SPD

| Dane SPD | | OBO V25-B+C/3 (I + II) | ETITEC – WENT TNC (I + II) | MOELLER SPB-12/280 (I + II) | LEUTRON PowerPro BCD 25kA (I+ II+III) | DEHNventil DV TNC 255 I+II |
|----------------------------|------------------|------------------------------|----------------------------------|-----------------------------------|--|----------------------------------|
| z tabliczki znamionowej | U_C [V] | 280 | 320 | 280 | 255 | 255 |
| | I_{imp} [kA] | 7,0 | 12,5 | 12,5 | 25 | 25/75 |
| | I_n [kA] | – | – | 25 | – | – |
| | I_{max} [kA] | 50 | – | 50 | – | – |
| | U_p [kV] | < 0,9 | < 1,0 | 1,5 | < 1,0 | < 1,5 |
| | I_{bezp} [A] | 160 | – | 160 | – | – |
| z katalogu | U_C [V] | 280 | 400 | 280 | 255 | 255 |
| | I_{imp} [kA] | 7,0 | 12,5 | 12,5 | 25 | 25/75 |
| | I_n [kA] | 30 | – | 25 | – | 25/75 |
| | I_{max} [kA] | 50 | – | 50 | – | 50 |
| | U_p [kV] | < 0,9 | – | 1,5 | < 1,0 | – |
| | $U_{zapłd}$ [kV] | – | – | – | < 1,0 | < 1,5 |
| | I_{bezp} [A] | 160 | 125 | 160 | 250 (100) | 125 (315) |

K na U [Ub]U] d f c W X i f m d f c V] Y f W Y

.....>ghfnYVh nfcni a]Uû ž' Y'XcVCE']'U_U_c'k]Y_cW'bu'k ũ V]k c W]c[fUb]Vmb]_CE' dfnYd] ' dck]bbU'Vm 'Xc_cbrk UbU'n[cXb]Y'nY'ghUbXUfXck ma]'dfcW'Xi fUa]'F nYVh 'YXbU_ k 'hma ž' Y'bcfa min'nU_fYgi 'c[fUb]Vmb]_CE' dfnYd] 'k]bghU'UWUW' 'b]g_cbUd] W]ck mW' i 'Y[U^ 'ghU'ma 'a cXmZ]_UWca ž'Vč 'cVfUni ^ 'bUgh di ^ W' Xc_i a Ybhm'%'Q' Q&Q' O+Q' Q Q' Q%' Q' K 'b]Y_hCE'mW' 'n'b]VW' 'a cXmZ]_UWca 'i 'Y[U'fCE' b]Y 'gdcgCE' VUXUb]U'c[fUb]Vmb]_CE' " 'BU' dfnm_ũX'k 'bcfa UW' 'Q'Q' O+Q'Ygh'cb'b]Ya U']XYbm'Vbnž'U'k 'bcfa]Y'Q' QcXbchck i 'Y'g] ' na]UbminUfCE' bc'k 'cXb]Yg]Yb]i 'Xc'bi a YfUW] 'dcghUbck]Y' ž' 'U_]'Xc']W' 'hfY W]' '.....Dc'UbU'n]Y'nUW'cXn 'VW' 'na]Ub'k 'k ma]Yb]cbmW' 'Xc_i a YbHUW' 'nXYVh'Xck Ubc'g] 'bU' dfnYdfck UXnYb]Y'VUXU' 'k ['dcghUbck]Y' 'bcfa 'Q'Q' O+Q' 'BU'Y' mdcX_fY '] ž' Y'k 'bcfa UW' 'hmW' 'VfU_ 'Ygh'dcghUbck]Y' 'i]Yfi b_ck UbmW' 'bU'VUXUb]U'b]YghUbXUfXck mW' 'GD8' hmdi 'ž' =]'hmdi 'ž' =ž' =ž' =ž' " K 'nk] 'n_i 'n'hma 'c[fUb]Vmb]_] 'hY'dcXXUbc' dfCE'ca 'k ['dcghUbck]Y' d f c V] Y f W m W ' X c m W m W ' G D 8 ' h m d i ' % '.....K ' fCE' dUfUa YhfCE']gh'cbmW' 'X'U'VUXU' ž'cVc_'bUd] W]U' hfk Uũ^dfUW'mi W] 'bUd] W]ck Y[c' dcn]ca i 'cW'fcbmi dž'bU'Y' mik ma]Yb] 'na]YfncbY' 'bUd] W]Y'c[fUb]Vmb]U]ž'U'k 'hma' 'bUW] W]Y' cVb] 'cbY' i fYg] 'Yk "'bUd] W]Y' nUdčbi 'l nUdč'fk 'dfnmdUX_i 'GD8' nUk]YfU^ 'VW' 'Y'Ya Ybh' i W]bU^ 'Vhž'cfUn'df 'Xm' 'nbUa]cbck mik mũX'ck Vmi'=ž'a U_gma 'Ubmik mũX'ck Vmi'=a U' ž' ja di 'gck m'=a dž'bUgh dVmi=Z] 'Yk "'a U_gma 'Ubmidf 'X'XcVYnd]YW]Yb]U'hcd]_ck Y[c'.....I k U[U'_cbW'bhfi 'Y'g] 'bU'dcXghU'k ck mW' 'k ma U[Ub]UW' ž'cV^ 'hmW' 'VUXUb]Ua]' hmdi ž'Xc' _hCE'mW' ' ! n[cXb]Y'n'd"' +bcfa mO+Q! 'bU'Y' mia]"b" 'c_fY 'Yb]Y'na]YfncbY[c' 'bUd] W]U' c[fUb]Vmb]U' 'fd"' +) 'ž']'dfCE'U'Xn]Uũb]U' 'fd"' +** 'ž' "Gdc' fCE'k ma]Yb]cbmW' 'k 'hmW' 'di b_HUW' 'dca]UfCE']'dfCE' 'i nbUbc' nU' 'bU'k U' b]Y'gnY']'nXYVh'Xck Ubc'g] 'k m_cbU' .

!`dca]UfmbUd] V\U`cVb] cbY[c`dfnYX`dfCEV `]`fbY`Y`_m`k b]Y`X`U`&`nYghUk CEK E`dc`dfCEV]Y`
Xn]U`U`b]U/
!`dca]UfmbUd] V\U`nUd`c`bi`c[fUb]V`mb]_CEK`n`Y`Ya`YbhYa`i`V\boU^`V`ra`/
!`k`gh`dbY`_cbXm`W`cbck`Ub]Y`dfnYX`dfCEV`Xn]U`U`b]U`_`Ugmi`=
!`dfCEV`mi`Xn]U`U`b]U`_`Ugmi`=dc`k`gh`dbma`_cbXm`W`cbck`Ub]i`]`Xc`XU`h`ck`c`dfCEV`mi`_ccf`Xmb`U`W`mb`Y`"
"8`U`^`Ugbc`V`dc`XU`Y`g]`z`Y`n`U`na`]Y`fnc`b`Y`b`Ud]`V\Y`c[fUb]V`mb]U`i`nb`Ubc`!`n[c`Xb]Y`n`Y`
gh`Ub`XU`f`Xck`Y`[c`XY`Z]b]V`!`b`U`k`]`_gn`k`U`f`hc`n`U`f`Y`Y`gh`f`ck`Ub`Y`[c`fk`[`d`"+)`"&`E`b`Ud]`V\U`
b`U`n`U`V`g`_`U`W`GD8`dc`X`V`U`g`c`X`Xn]U`U`mk`Ub]U`b`U`i`XU`f`Ya`df`X`ck`ma`c`_`gn`h`U`U`V`Y``#&`\$`]`c`
n`U`X`Y`_`U`f`ck`Ub`Y`^`d`f`n`Y`n`d`f`c`X`i`W`b`h`U`U`a`d`]`h`i`Xn]Y`i`V`f`k`[`d`"+)`""`E`b`U`k`]`_gn`k`U`f`hc`
b`Ud]`V\U`k`n`k`c`U`b`Y`[c`dfn`Y`n`i`XU`f`%`z`&`#)`\$`dfn`Y`X`k`m`U`X`ck`Ub]Y`a`n`i`d`Y`b`m`a`a`]`X`n`m`
Y`Y`_`h`f`c`X`U`a`]`GD8`n`Y`Ya`YbhYa`i`V\boU^`V`ra`"K`gh`dbY`_cbXm`W`cbck`Ub]Y`dc`Y`[`U`c`b`U`
d`f`n`m`u`V`m`Y`b]i`GD8`Xc`f`CE`U`b`Ud]`V\U`d`f`n`Ya`]Y`b`b`Y`[c`fk`[`d`"+)`"*`""`E`z`U`b`U`gh`db]Y`b`U`
X`c`d`f`ck`U`X`n`Y`b]i`Xc`GD8`%)`i`XU`f`CE`df`X`ck`m`W`c`_`gn`h`U`U`V`Y``#&`\$`]`c`k`U`f`hc`V\`n`b`U`a`]`c`b`ck`Y`^`
n`U`X`Y`_`U`f`ck`Ub`Y`^`d`f`n`Y`n`d`f`c`X`i`W`b`h`U`z`k`gh`Ub`XU`f`X`ck`m`W`c`X`gh`d`U`W`V`m`U`g`ck`m`W`]`_`h`ck`m`W`f`k`[`d`
d`"+)`"*`"(E`"=k`f`Y`gn`V`Y`df`CEV`mi`Xn]U`U`b]U`_`Ugmi`=dc`Y`[`U`u`m`b`U`d`f`n`m`u`V`m`Y`b]i`GD8`Xc`f`CE`U`
b`Ud]`V\U`d`f`n`Ya`]Y`b`b`Y`[c`fk`[`d`"+)`"*`""`E`c`n`U`X`Y`_`U`f`ck`Ub`Y`^`d`f`n`Y`n`d`f`c`X`i`W`b`h`U`k`U`f`hc`V\I`V`z`U`
b`U`gh`db]Y`b`U`X`c`d`f`ck`U`X`n`Y`b]i`Xc`GD8`f`k`[`d`"+)`"*`"(E`k`c`X`gh`d`U`W`V`m`U`g`ck`m`W`z`k`ma`U`[`U`b`m`W`
Xc`g`d`f`U`k`X`n`Y`b]U`]V`gh`U`V]`bc`V\`V`Y`d`b`Y`^`]`c`V`U`c`X`n`Y`b]U`Xc`h`Ya`d`Y`f`U`h`f`m`i`c`h`c`V`m`Y`b]U`z`_`c`Y`b`c`
i`XU`f`CE`df`X`ck`m`W`c`k`U`f`hc`V\`\$`%`_`a`d`z`\$`z`&)`_`_`a`d`z`\$`z`)_`_`a`d`z`\$`z`+)`_`_`a`d`]`%`_`_`a`d`z`d`f`n`m`i`V`m`a`
``a`d`Y`gh`n`U`X`Y`_`U`f`ck`Ub`d`f`n`Y`n`d`f`c`X`i`W`b`h`U`k`U`f`hc`V\`gn`V`m`t`ck`i`XU`f`i`df`X`ck`Y`[`c`"

C`_`f`Y` `Y`b]Y`b`Ud] `c[fUb]V`mb]U`c`Vb] cbY[c`i`f`Y`g`]`n`Ud`c`bi`i`n`Ud`u`

"8`c`V`U`X`U`i`n`h`c`[`Y`b`Y`f`U`h`c`f`CEK`df`X`ck`m`W`k`n`k`U`f`n`U`^`V`m`W`i`XU`f`m`i`c`_`gn`h`U`U`V`Y``#&`\$`]`c`
k`U`f`hc`V\`gn`V`m`t`ck`Y`^`X`c`(`\$_`5`]`X`c`%`\$`\$_`5`"D`f`CEV`m`i`n`U`d`c`b`c`k`Y`Y`Ya`Ybh`CEK`i`V\boU^`V`m`W`
d`f`n`Y`d`f`ck`U`X`n`c`b`c`d`f`n`m`i`n`U`g`h`c`g`ck`Ub]i`[`Y`b`Y`f`U`h`c`f`U`<`]`c`H`Y`gh`=7`D`%`\$`%`z`k`n`k`U`f`n`U`^`V`[`c`i`XU`f`m`i`
b`Ud]`V\`ck`Y`c`_`gn`h`U`U`V`Y`%`z`&`#)`\$`]`c`k`U`f`hc`V\`gn`V`m`t`ck`Y`^`k`n`U`_`f`Y`g]Y`X`c`*`_`J`"D`ca`]U`f`CEK`b`Ud]`
X`c`_`c`b`n`k`U`b`c`g`c`b`X`U`a`]`h`m`d`i`H`Y`gh`_`c`d`Z`H`Y`_`h`f`c`b]i`]`D`A`?`f`p`#`%`\$`\$`E`c`n`U`_`f`Y`g]Y`*`_`J`]`h`m`d`i`D`D`9`c`
n`U`_`f`Y`g]Y`(`_`J`"D`ca`]U`f`CEK`df`X`i`X`c`_`c`b`n`k`U`b`c`d`h`D`Y`U`f`g`c`b`U`%`(`&`"D`f`n`Y`V]Y`[`]`b`Ud]`V\U`]
df`X`i`f`Y`Y`gh`f`ck`U`b`c`g`V`h`c`g`_`c`d`U`a`]`H`Y`_`h`f`c`b]i`H`8`G`"
"D`ca`]U`f`m`h`Y`dc`Y`[`U`u`m`b`U`f`CEK`bc`V`m`Y`g`b`Y`^`f`Y`Y`gh`f`U`W]`d`f`n`m`i`c`c`b`m`W`i`XU`f`CEK`df`X`ck`m`W`c`
`gn`h`U`U`V`Y``#&`\$`c`V`i`V]Y`[`i`b`c`k`c`V\]`c`k`U`f`hc`V\`=b`z`n[`c`X`b`Y`^`n`X`Y``U`f`U`W`U`a`]`d`c`g`n`V`m`Y`[`CE`b`m`W`
d`f`c`X`i`W`b`h`CEK`f`f`U`_`k`h`U`V`]V`m`%`z`]`d`c`k`c`X`ck`U`b`m`W`b`j`a`]`b`Ud]`c`v`b]`c`b`m`W`i`f`Y`g`b`U`n`U`V`g`_`U`W`
GD8`"Ca`U`k`]U`b`Y`f`Y`Y`gh`f`U`W`Y`k`m`_`c`b`n`k`U`b`c`d`f`n`Y`X`df`CEV`Xn]U`U`b]U`k`c`X`b]Y`g]Y`b]i`Xc`_`U`X`Y`[`c`n`
V`U`X`U`b`m`W`GD8`]`dc`h`Y`^`d`f`CEV]Y`!`Y`X`m`b]Y`k`V`U`W`_`c`b`h`c`b`m`W`!`k`c`X`b]Y`g]Y`b]i`Xc`X`k`i`
k`n`V`f`U`b`m`W`GD8`f`C`6`C`]`8`9`<`B`j`Y`b`h]`E`"K`m`b`_]`f`Y`Y`gh`f`U`W]`d`f`n`Y`X`gh`U`k`]`c`b`c`k`h`U`V`]V`m`i`&"`

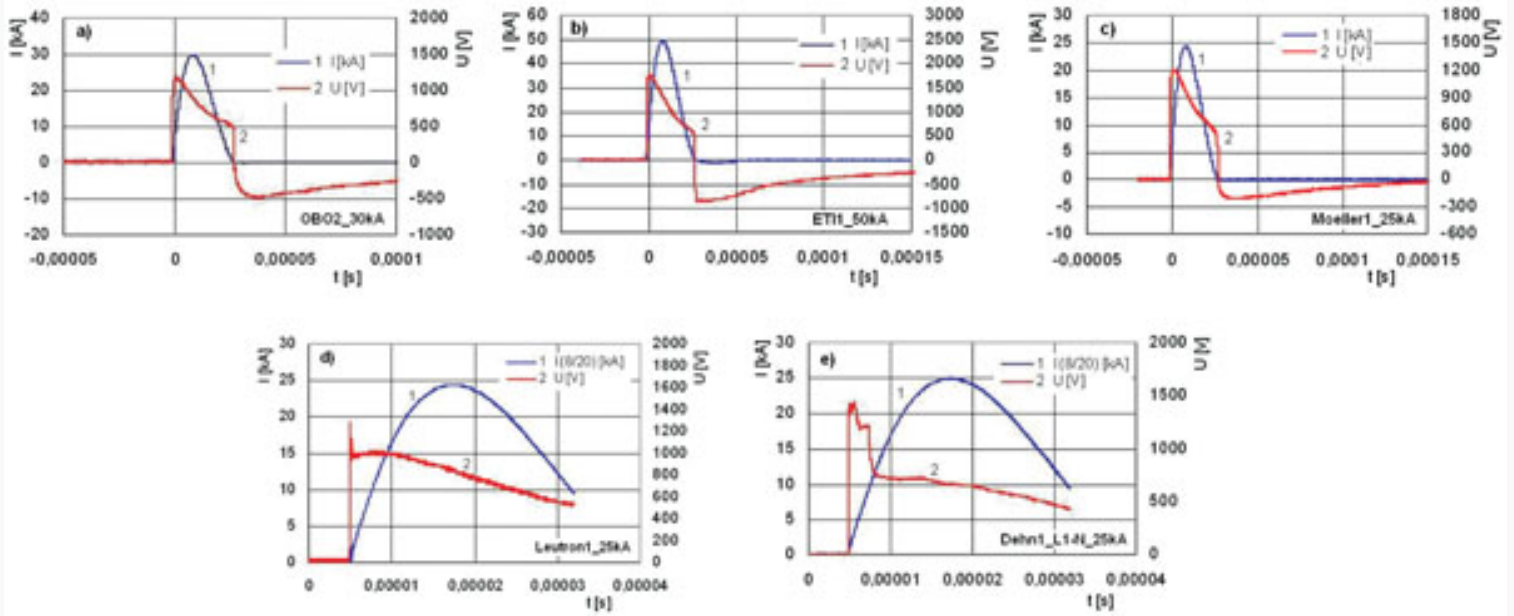
TABLICA. 2. Wyniki pomiarów napięcia obniżonego i napięcia zapłonu badanych SPD

| Dane SPD | | OBO V25-B+C/3 (I + II) | ETITEC - WENT TNC (I + II) | MOELLER SPB-12/280 (I + II) | LEUTRON PowerPro BCD 25kA (I+ II+III) | DEHNventil DV TNC 255 I+II |
|--|-------------------|------------------------------|----------------------------------|-----------------------------------|--|----------------------------------|
| katalogowe | U_p [kV] | < 0,9 | < 1,0 | 1,5 | < 1,0 | < 1,5 |
| | I_n [kA] | 30 | - | 25 | - | 25 |
| z pomiarów przed próbą działania | U_{res+} [kV] | 1,16-1,22 | 1,58-1,79 | 1,10-1,22 | 1,25-1,75 | 1,42-1,44 |
| | I_{n+} [kA] | 29,9-30,0 | 49,6 | 24,5 | - | 24,97-25,05 |
| | U_{res-} [kV] | 1,18-1,24 | 1,64-1,71 | 1,15-1,19 | 1,18-1,67 | 1,34-1,39 |
| | I_{n-} [kA] | 30,0 | 49,6 | 24,5 | - | 24,02-25,17 |
| | $U_{zapł+d}$ [kV] | - | - | - | 1,25-1,75 | 1,01-1,11 |
| | $U_{zapł-d}$ [kV] | - | - | - | 1,18-1,67 | 0,95-1,11 |
| z pomiarów po próbie działania | U_{res+} [kV] | 1,15-1,22 | - | - | - | 1,55 |
| | I_{n+} [kA] | 29,5-29,7 | - | - | - | - |
| | U_{res-} [kV] | 1,15-1,20 | - | - | - | 1,46 |
| | I_{n-} [kA] | 29,5 | - | - | - | - |
| | $U_{zapł+d}$ [kV] | | | | | 1,07 |

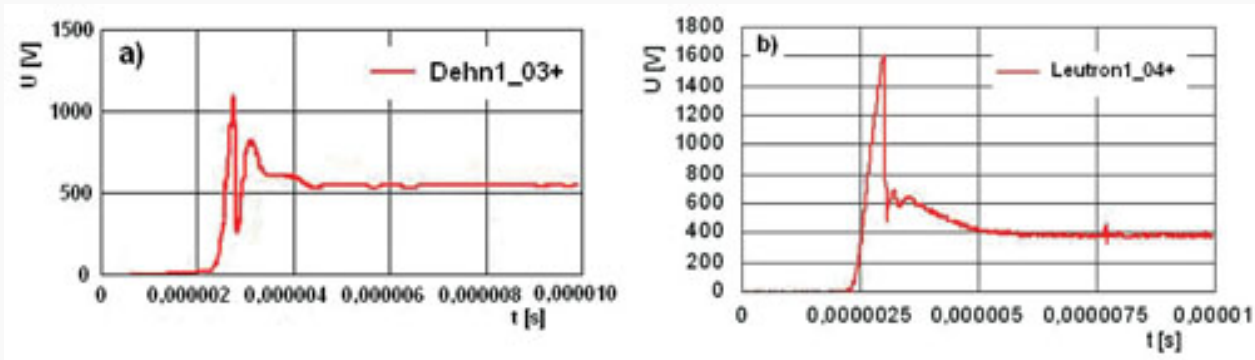
.....N[cXb]Y'n'cVck] ni ^ Vtra _fmrYfji a 'cWbmk mb]_CK 'dfCVnž'bUd] VY'cVb] cbY'i fYg'bU' c[fUb]Vmb]_i 'dfnYd] 'b]Y'dck]bbc'Vm'k' UXbma 'dfnmdUX_i 'k] _gnY'b] 'XY_'Ufck Ubm' dfnYn'dfcXi W'bhU'dcn]ca 'cV'fcbm' d''Hra VmUgYa ž'U_'k mb]_U'n'XUbmV' hUV]'Vn&ž'b]Y'k Y' k gnrgh_]V' dfnmdUX_UV' bUd] VU'hY'i hfnma i ^ 'g] 'k [fUb]VWV'hY[c'dcn]ca i ''8cmV'mhc'k' gnV'Y['CEbc V'c[fUb]Vmb]_CK 'Z]fa . 'C6C'69HH9FA5BBž'@9I HF'CB]'9H+H97''K']V' dfnmdUX_i ž'VUXUbm' dfnYX'dfCV' 'Xn]UŮb]U'dcn]ca 'cV'fcbm'Vm' dfnY'_fcV'cbm'ic'k' Ufhc' nUk]YfU^ W'g] 'k [fUb]VWV'cX'&, i 'Xc'+- i ''BUhca]Ughk' dfnmdUX_i 'c[fUb]Vmb]_CK ' Z]fa mA C9@@9F]'89<B/ 'Gx<B9'bUd] VU'cVb] cbY'cXdck]UXU'miXY_'UfUW'ca]'hc'bUk Y'h'n' dYk b' fYnYfk ž'XcV'cXn W'Xc'&, i ''Na]UbU'V]Y[i bck c V'i XUfCK 'a]UŮ'k dŮrk' b]YnbU'V'm'

.....FY'YghfUWV'bUd] 'cVb] cbmV' 'dc'dfCV]Y'Xn]UŮb]U'dfnmb]cgŮm'dcXcVbY'fY!ni 'HJm'U_' dfnYX'dfCV' 'Xn]UŮb]U''=hU_ž'k' dfnmdUX_i 'GD8'Z]fa mA C6C'69HH9FA5BB'bUd] VU'cVb] cbY' nUk]YfU'mig] 'a b]Y^k] V'^k' hma 'gUa ma 'dfnYXn]U'Y'Vž' dfnYX'dfCV' 'Xn]UŮb]Už'bUhca]Ughk' dfnmdUX_i 'GD8'Z]fa mA 89<B/ 'Gx<B9'bUgh d]Ů'Y__U'nk m _U'hY[c'bUd] VUž'dck cXi ^ W' bUk Yhž'dfnmi XUfUW'V]Y[i bck c V'XcXUrb]Y'ž' i 'dfnY'_fcV'Yb]Y'dcn]ca i 'cV'fcbm'

.....Dfnm_ŮXm' dfnYV]Y[CK' df' Xi' i XUfck Y[c]'bUd] VU'cVb] cbY[c'k nVfUbmV' dfCVY_' dfnYXghUk]cbc'bU'fmg''%'8cXUh_ck c'bU'fmg''& dfnYXghUk]cbc'V'UfU_hY'fmg]m_]nUdŮcbck Y' c[fUb]Vmb]_CK 'nUk]YfU^ V'V'Y'Ya Ybh]g_]Yfb]_ck nž'h''c[fUb]Vmb]_CK '89<BJ Ybh]! HB7]' @Yi h'cb' Dck YfDfc'678''



Fng''%'Dfnm UXmidfnYVY[CK 'df Xi 'i Xufck Y[c', #&\$ 'bUd] VJU'cVb] cbY[c'k 'GD8 Z]fa m'Uk'C6C' 69H9F A 5BBž'Vl'9Hž'Vl' A C9@9F ž'Xl' @9I HF CBž'Yl'89< B'

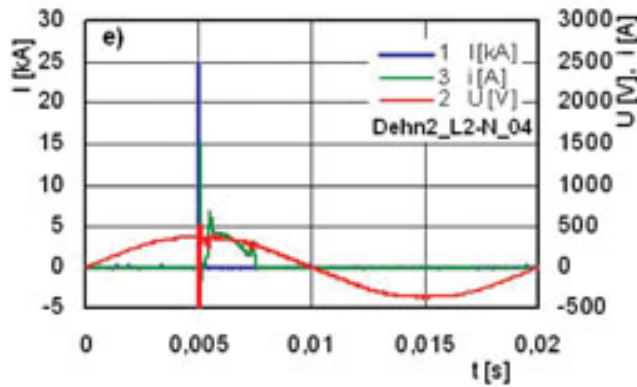
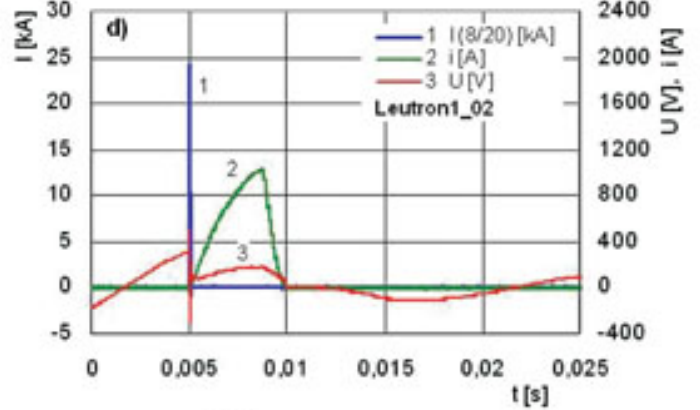
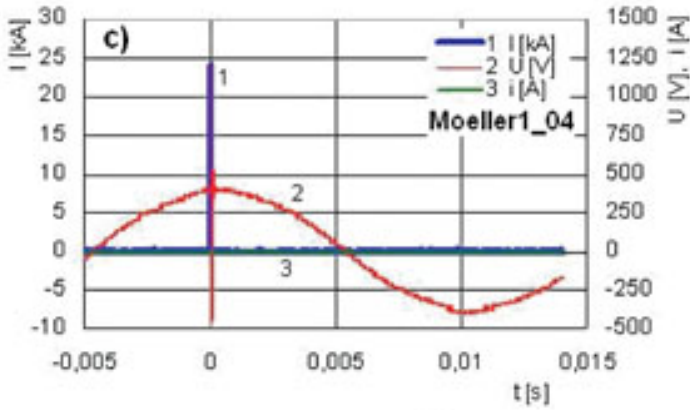
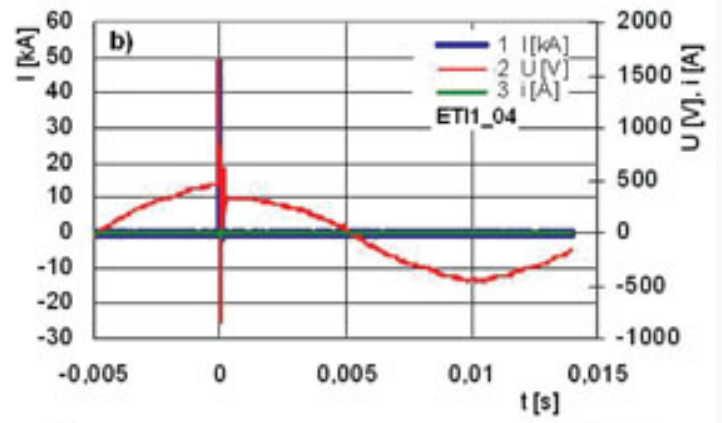
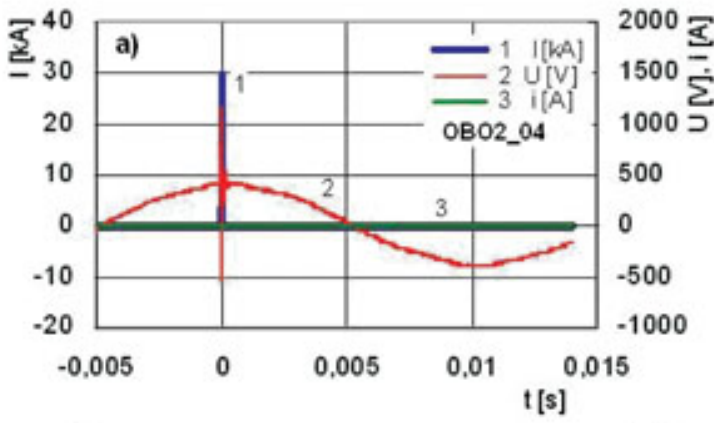


Fng''&'='i ghfUWU'bUd] VJU'nUd'cbi 'Y'Ya Ybhi 'i VjbU^ W[c'k 'GD8 Z]fa m'Uk'89< B / 'Gx < B9ž'Vl' @9I HF CBž'dfnmi XufnY%'ž&#) \$'

.....DfnYVY[]'dfnYXghUk]cbY'bU'fmg''%d'ck]YfXnU^ ž' Y'bUd] VJU'cVb] cbY'b]Y'dfnY_fUWmU^ XY_'Ufck UbmVX'dcn]ca CK 'cVX'fcbmik'dfnmUX_i 'c[fUb]Vmb]_CK 'Z]fa miA C9@9F 'ffmg''%Vl' 89< B / 'Gx < B9'ffmg''%ž'U'k 'dcncghU'UmVX'dfnmUX_UVX'g 'cX'hmVX'dcn]ca CK 'k m gnY''' DcXcVb]Y'dfnYVY[]'dfnYXghUk]cbY'bU'fmg'' &'d'ck]YfXnU^ ž' Y'bUd] VJU'nUd'cbi 'Y'Ya Ybhi 'i VjbU^ W[c'k 'dfnmdUX_i 'c[fUb]Vmb]_U'Z]fa mi89< B / 'Gx < B9'Ygh'b] gnY'b] 'Y[c'dcn]ca 'cVX'fcbmiffmg'' &Už'U'k 'dfnmdUX_i 'c[fUb]Vmb]_U'Z]fa mi@9I HF CB 'Ygh'k m gnY'ffmg''&Vl''

K gh dbY'_cbXnW'cbck Ub]Y'

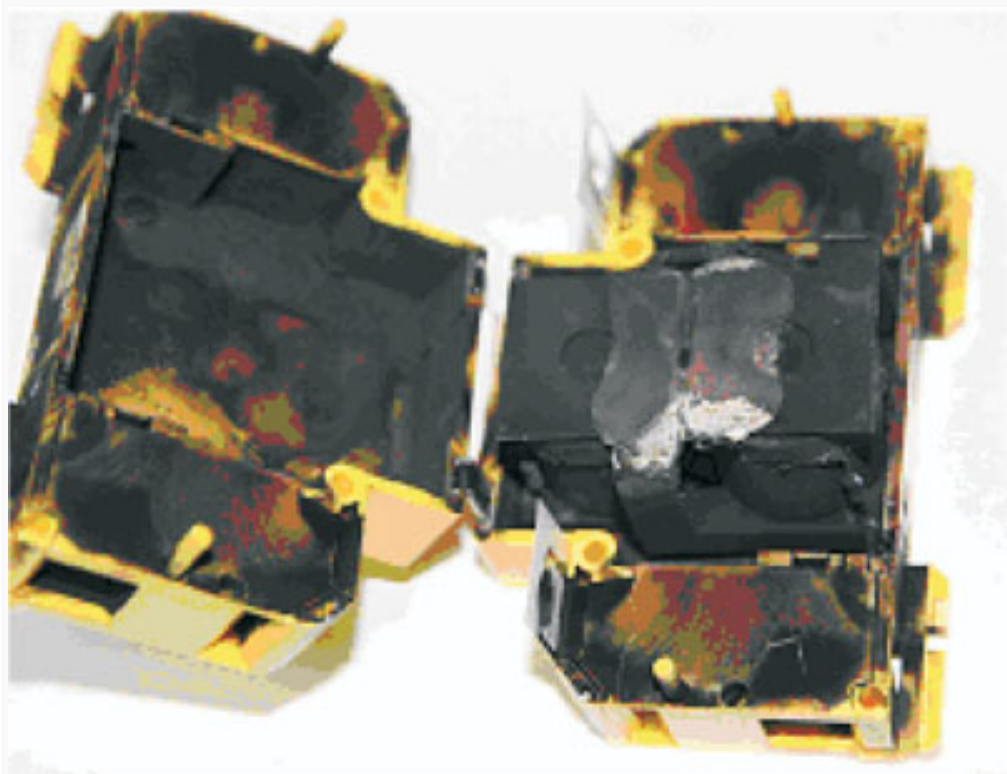
.....8c'VUXU ž'k m_cbnk UbmVX 'n[cXb]Y'n'dcghU'bcck]Yb]Ua]+'*" ('bcfa miO'Č'k m_cfnmghUbc' hfUbgZcfa Uhc'f'f'CEZUnck mbU'bUd] VJU'dfnYa]YbbY'c'Vh'ghch]k c VY) \$' <nž'Xcghcgcck UbY'dc' gh'cb]Y'cXV]cfi 'Xc'bUd] 'hf'k UŮ^dfUWmU' WVUXUb'VX'c[fUb]Vmb]_CK 'dfnYd] ž'cfUn' [YbYfUhc'f'f' Xck'Y'k'mrk'UfnU^ VY'i Xufmc'_gnHU'VY', #&\$ 'c'k Ufhc' VY'gnV'm'rtck'Y^Xc'%'\$\$'_5''Dca]UfCK 'df Xi 'Xc'_cbnk Ubc'd' h' 'DYUfgcbU'%' (&' ž'U'dca]Ufi 'bUd] VJU'gcbXUa]'DD9'] DA ? 'fP'##%'\$\$'ž'c'nU_fYg]Y'Xc'*_] ž'k gd'fUW' ^ Vtra]'n'cgV'm'icg_cdYa 'h'mdi 'HY_h'f'cb] 'H8G'k' gdfn 'Yb]i 'n'_ca di h'YfYa ''



Fmg''' "Dfnm_ŰXmidfnYV]Y[Ćk 'bUd] ']df XĆk 'dcXmUg'_cbXnWcbck Ub]U'GD8'Z]fa m'UĆ' C6C' 69HH9F A 5BBž'VĬ'9Hž'VĬ' A C9@9F ž'XĬ'@9I HF CB'

.....DcXmUg'_c'Y'bmW' dfĆVž'bU'dcXŰ WcbY'Xc'c[fUb]Wmb]_U'bUd] WY'dfnYa]YbbY'c' W' ghch]k c WY) \$' < n]' k Ufhc WY'Xcghcgc k UbY^Xc'bUd] WY' hfk UŰ^dfUWni Vž'bU_ŰXUbY'VmŰi k'cXgh dUW' WmUgck mW ž'cXdck]UXU^ WmW ' \$c'dfnYgi b] WY'ZUnck Y[cž'i XUfmdf Xck Y'c' _gnhUŰ]Y', #&\$]'c'k Ufhc WY'Wm' gnWmrc k mW ž'cXdck]UXU^ WmW' nbUa]cbck ma' df Xca' k mŰXck Wma' VUXUbmW'c[fUb]Wmb]_Ćk "'8'U'_U XY[c'n'b]W' nUdfc[fUa ck Ubc' Ű Wmb]Y'%) ' dfĆV'k' dfnYXn]U'Y'cVY'a i ^ Wma' () \$c'dfnYgi b] WY'ZUnck Y[cž'dcWmbU^ WcX'dfnY^ WY' bUd] WY'dfnYn'Yfc''Dfc[fUa' hYb'nfYU]nck Ubc'k' WŰĆ WY'k'cXb]Yg]Yb]i' Xc'_U XY[c'n' VUXUbmW'c[fUb]Wmb]_Ćk' n'k m' h_]Ya'c[fUb]Wmb]_U'Z]fa m'@9I HF CB''C[fUb]Wmb]_hYb'Ű' dc' dfnmĆ' Yb]i' Xfi []Y[c'i XUfi' df Xck Y[cž'h''dfnm_ WY'ZUnck ma' fĆk bna' '* \$cž'i' Y[Ű i gn_cXnYb]i ž'VĬ' i k]XcWmb]cbc' bU'Zhc[fUZ]'n'fmg'' ("I gn_cXnYb]Y'gdck cXck UĆ' nUXn]UŰb]Y' VYnd]YWmb]_U'k' cV k cXn]Y' dfcV]YfWma']'nUdfnYghUb]Y' XU'gnmW' VUXU' "C[fUb]Wmb]_] dncnghŰmW' Z]fa' dfnYgnŰm' dcnntmk b]Y'k' gnmgh_]Y' dfĆV'm' Dfnm_ŰXm'nUfY'Yghfck UbmW' dfnYV]Y[Ćk' g' dfnYXghUk]cbY' bU'fmg'' "DĆk]YfXnU^ 'cbY'ZU_hž' Y'k' dfnmdUX_i' GD8'Z]fa' C6C'69HH9F A 5BB'ffmg'' UĬž'9H=H97'ffmg'' VĬž' A C9@9F'ffmg'' VĬ]'89<B / 'Gx < B9'ffmg'' ' YĬ' df X' bUgh dWm'ncghŰügdUk b]Y' dfnYfk Ubm' BUhca]Ugh'k' dfnmdUX_i' GD8'Z]fa m' @9I HF CB'ffmg'' XĬ' df X' bUgh dWm'idŰrb' ŰdfnYn'V']g_c') 'a g]'ncghŰüdfnYfk UbmidfnYn'

VYnd]YVmb]_&) \$'5'dc'i gn_cXnYb]i 'c[fUb]Vmb]_U"



Fng"(" : chc[fUZU'i gn_cXncbY[c'c[fUb]Vmb]_U'@Yi Hfcb'

DfcZ"Xf\UV"']b "NXcVmgUk ':]gck g_]

A [f']b "'8ca]b]_?fUgck g_]

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Q%Q9B '*%* (' !%% &\$\$&"@ck!j c`hU[Y'gi f[Y'dfchYVW]j Y'XYj]Wg'DUfh'%% 'Gi f[Y'dfchYVW]j Y'XYj]Wg'VtbbYVWYX'hc`ck!j c`hU[Y'dck Yf'gmghYa g!'FYei]fYa Ybhg'UbX'hYghg" f=8H'n'O+Q
Q%Q9B '*%* (' !%% &\$\$&Z df5%% &\$\$* '@ck!j c`hU[Y'gi f[Y'dfchYVW]j Y'XYj]Wg'DUfh'%% 'Gi f[Y'dfchYVW]j Y'XYj]Wg'VtbbYVWYX'hc`ck!j c`hU[Y'dck Yf'gmghYa g!'FYei]fYa Ybhg'UbX'hYghg" f=CE bU'cX'Q%Q] O+Q

O Q9\ f'Yf'>"z; a Y'W '@. 'HYWbc`c []Y!_cbZ]_h3'?ca V]! 5V`Y]hYf'Z f'XYb'6`]m! 'i bX' yVYfgdUbbi b[ggW i m"; / < 'Bf' (z'&\$\$ ("

Q Q:]gck g_] 'N". 'DchfnYVU'gchcck Ub]U] 'cVWbU'g_i hYVmbc W'cVX fcbm]bghU'UW] 'Y'Y_hfnVmbmW' cX'dfnYd] 'Uha cgZYfnVmbmW "'9'Y_hfc]bghU'Uhc f'&\$\$* 'fk 'Xfi _i t

Q Q=97 '* \$' * (!)!) ' . &\$\$' "'9'YVWf]W] 'bghU'Uh]cbg'cZVi]X]b[g! 'DUfh')!) ' . 'GY'YVW]cb'UbX' YfYVW]cb'cZY'YVWf]W] 'Yei]da Ybh! '=gc`Uh]cbz'gk]hW]b['UbX'Vtbfhc`'! '5a YbXa Ybh%' 'FYj]g]cb' cZ7`Ui gY)' (. '8Yj]Wg'Zcf'dfchYVW]cb'U[U]bgh'c] Yfj c`hU[Yg"

O Q=97 '*%* (' !%& &\$\$) "'@ck!j c`hU[Y'gi f[Y'dfchYVW]cb'XYj]Wg" 'Gi f[Y'dfchYVW]cb'XYj]Wg' VtbbYVWYX'hc`ck!j c`hU[Y'dck Yf'X]ghf]Vi h]cb'gmghYa g!'DUfh'&. 'GY'YVW]cb'UbX'Udd`]W]h]cb' df]bV]d'Yg"

O+Q=97 '*%* (' !% &\$\$) '9X"&"@ck!j c`hU[Y'gi f[Y'dfchYVW]j Y'XYj]Wg'DUfh'%% 'Gi f[Y'dfchYVW]j Y'XYj]Wg'VtbbYVWYX'hc`ck!j c`hU[Y'dck Yf'gmghYa g!'FYei]fYa Ybhg'UbX'hYghg" f=8H'n'O+Q

Q Q=97 '*%* (' !%% &\$\$* "'9X%"@ck!j c`hU[Y'gi f[Y'dfchYVW]j Y'XYj]Wg'DUfh'%% 'Gi f[Y'dfchYVW]j Y'XYj]Wg'VtbbYVWYX'hc`ck!j c`hU[Y'dck Yf'gmghYa g!'FYei]fYa Ybhg'UbX'hYghg" f=CE bU'cX'Q%Q] O+Q"

O QDB! =97 '* \$' * (!(!((' . %- - - "'=bgH'U'WY'Y'Y_hfnVmb'Y'k 'cV]Y_hUW'Vi Xck `UbmW"'C'W'fcbU' X'U'nUdYk b]Yb]U'VYnd]YVWY' gHk U"'C'W'fcbU'dfnYX'dfnYd] V]Ua]"'C'W'fcbU'dfnYX'dfnYd] V]Ua]'

Uha cgZYfmVmbma]]û VmYb]ck ma]"
Ø%QDB! =97 * \$' * (!!(((. &\$ \$\$%" =bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUWX`Vi Xck`UbmVX`"CW fcbU`
X`U`nUdYk b]Yb]U`VYnd]YVMY`ghk U`"CW fcbU`dfnYX`dfnYd]`V]Ua]`"CW fcbU`dfnYX`nU`_`C`V`b]Ua]`
Y`Y`_hfca U[bYhmVmbma]]f9A`±`k`]bghU`UWUWX`cV]Y`_hCk`Vi Xck`UbmVX`"
Ø%QDB! =97 * \$' * (!!)' (. &\$ \$' "" =bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUWX`Vi Xck`UbmVX`"8cVCE`]
a cbhU`k`m`d`cgU`Yb]U`Y`Y`_hfmVmbY[c`"I`fn`XnYb]U`Xc`c`V`fcbmicX`dfnYd]`"
Ø%&QDB! =97 * \$' * (!!) (. % - - "" =bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUWX`Vi Xck`UbmVX`"8cVCE`]
a cbhU`k`m`d`cgU`Yb]U`Y`Y`_hfmVmbY[c`"I`n]Ya`]Yb]U`]`dfnYk`cXmicVX`fcbY`"
Ø% QDB! =97 * % \$ & (!% &\$ \$\$"CW fcbU`cX[fca`ck`U`cV]Y`_hCk`Vi Xck`UbmVX`"7n``%`NUgUXmic`
c[`CEbY`"
Ø%(QDB! =97 * % %&!%`&\$ \$%"CW fcbU`dfnYX`d]c`fi`bck`ma`]`ja`di`g`Ya`Y`Y`_hfca U[bYhmVmbma`
fl@9A`D`L`"7n``%`NUgUXmic[`CEbY`"
Ø%) QDB! =97 #HG` * % %&!` . &\$ \$' ""CW fcbU`dfnYX`d]c`fi`bck`ma`]`ja`di`g`Ya`
Y`Y`_hfca U[bYhmVmbma`fl@9A`D`L`"7n`` . `K`ma`U[`Ub]U`X`cm`V`W`i`fn`XnY`Xc`c[`fUb]`V`Ub]U`
dfnYd]`f`GD8`L`"
Ø%* QDB! 9B` * %* (`!% % &\$ \$*"B]g`_`cbUd]`V]ck`Y`i`fn`XnYb]U`Xc`c[`fUb]`V`Ub]U`dfnYd]`"7n`
%%`I`fn`XnYb]U`Xc`c[`fUb]`V`Ub]U`dfnYd]`k`g]Y`V]UWX`f`cnXn]Y`V`m`V`b]g`_]Y[`c`b`Ud]`V]U`
K`ma`U[`Ub]U`]`df`C`V`mf`I`8`H`n`Ø%Q]`O`+`Q`"
Ø%+ QDB! 9B` * &' \$) !% &\$ \$*`fI`L`"CW fcbU`cX[fca`ck`U`!`7n``%`NUgUXmic[`CEbY`"
Ø% QDB! 9B` * &' \$) !& . &\$ \$*`fI`L`"CW fcbU`cX[fca`ck`U`!`7n``&`NUfn`XnUb]Y`f`mm_]Ya`"
Ø%- QDB! 9B` * &' \$) !` . &\$ \$*`fI`L`"CW fcbU`cX[fca`ck`U`!`7n``'`Gn`_`c`X`m`Z]n`m`_`U`b`Y`k`
cV]Y`_V]Y`]`nU[`fc`Yb]Y`m`V]U`"
Ø&\$QDB! 9B` * &' \$) ! (. &\$ \$*`fI`L`"CW fcbU`cX[fca`ck`U`!`7n`` (. `I`fn`XnYb]U`Y`Y`_hfmVmbY`]
Y`Y`_hfcb]`V`mbY`k`cV]Y`_V]Y`"

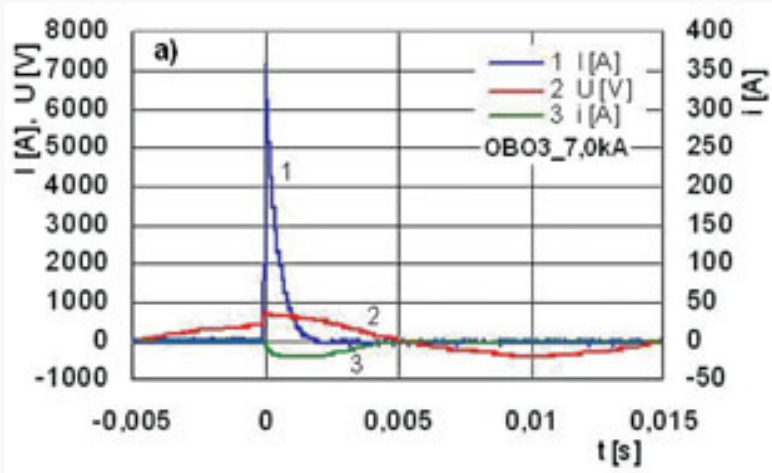
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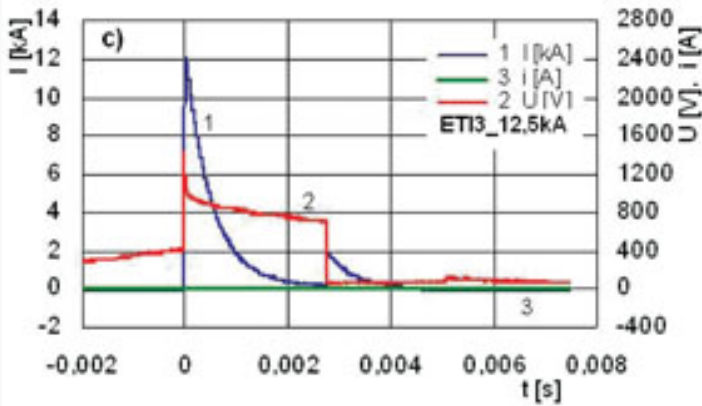
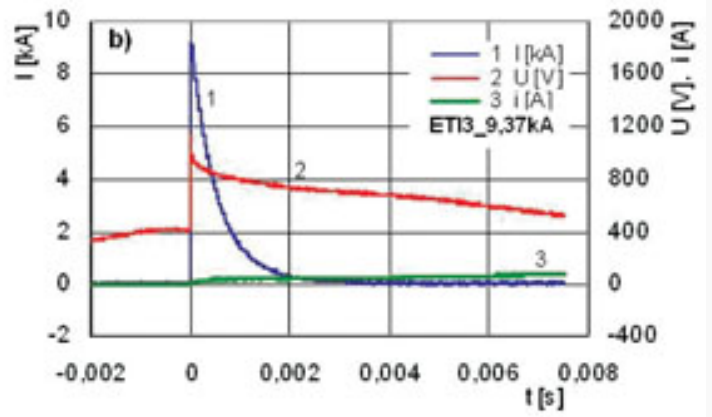
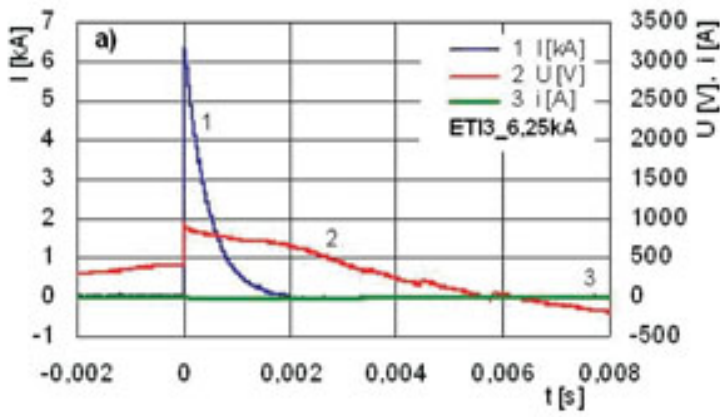
DfcV`Ya mXcVcfi `c[fUb]Vmb]_Ck `dfnYd] `Xc`cWfcbmi fn XnY `
Y`Y_hfnVmbmV]`Y`Y_hfcb]VmbmV`k `cV]Y_HUW`Vi Xck `UbmV`fB&
NXcVngUk : `]gck g_]ž`8ca]b_`?fUgck g_]`

DfnYXghUk]Ua mXfi [`Vm `Ufm]i ũ `c`dfcV`Ya UmW`XcVcfi `c[fUb]Vmb]_Ck `
dfnYd] ""7n `d]Yfk gnU`_UnUŰ]g] `k`fŰ`Y_hfcb]bghU`UhcfnYffibf`%\$&\$\$*""

DfC/mXn]UŰb]U`c[fUb]Vmb]_Ck `Ugm=`dfnm] XUfUW`df`Xck nW`%\$#`) \$`K`dfC/UW`
mW` fCŰ`Űa`bUd] V]U`hfK`UŰ`^dfUWm/`W!`U`_dcdfnYXb]c!`VmühfUbgZcfa`Uhc`f`hfCZUnck`nž`U`
fCŰ`Űa`df`Xi`!`[`YbYfUhc`f`k`ntk`UfnU`^`Vmi`XUfmi`c`_gnhUŰ]Y`%\$#`)`\$`]`c`k`Ufhc`V]`gnVmtck`Y`^`
g]`[`U`^`W`^`%\$\$_5ž`U`k`]`Wc`k`Ufhc`V]`dfnY`_fUWU`^`W`^`nbUWmb]Y`k`Ufhc`V]`XY`_`Ufck`UbY`dfnYn`
dcgnV]Y`[`CbmV`dfcXi`V]bhCk`GD8`"8`c`dca`]UfCk`nUghc`gck`Ubc`df`Xck`d`h`DYUfgcbU`
%(`&`cfUn`bUd]`V]ck`Y`gcbXmDD9`(`_J`ž`DA`?`*`_J`]`HUgh_cdZ`HY`_hfcb]`fP`#`%\$`\$`L`Dca`]Ufm`
fY`Yghfck`Ubc`nU`dca`cW`k`gdCdfUW`^`W`[`c`n`_ca`di`hYfYa`cgVmcg`c`di`m`di`HY`_hfcb]`i`
H8G`"K`mVfUbY`gdc`fCŰ`nUfY`Yghfck`UbmV`k`Ufhc`V]`df`Xi`ž`nV`]`cbY`Xc`k`Ufhc`V]`ž`)`_]a`dž`
ž`+`)`_]a`d`]`_]a`d`cfUn`!`cXdc`k`]UXU`^`W`k`Ufhc`V]`ca`df`XCk`i`gn`cXnYb]U`i`V`df`XCk`
a`U`_gma`U`bmV`!`ŰXi`b_]`E`]`YbYf`[`]Y`k`Ű`V]k`Y`K`#`nYghUk`]cbc`k`hUV`""`"
""N`fY`YghfUW]`k`nb_]Už`Y`Xk`U`_ca`d`Y`m`f`C`6C`69HH9FA`5BB`]`89<B/Gx<B9L`gdc`fCŰ`
VUXUbmV`dfCŰY`_dfnYgnm]dfCŰmidca`m`b]Y`"BUhca`]Ugh`dfCŰ_]`n`dcncghUŰmV`_ca`d`Y`hCk`
i`Y`[`UŰmi`gn`cXnYb]ca`i`dfnmidf`Xn]Y`a`b]Y`gnma`b`]`XY`_`Ufck`Ubm]df`X`i`XUfck`m`_]a`d`"
6nmihc`U`Vc`XYZY`_hmik`Ufmg]hfCk`dc`VmUg]Y`cX`&ž`(`a`g`Xc`)`ž`%`a`gž`U`Vc`dfnYfk`Ub]U`cV`k`cXcK`
bUk`Y`hdc`%\$`a`g`"BU`_c`Y`bmV`fmg]`b`_UW`fbcX`)`Xc`-`L`dc`_UnUbc`dfnm`ŰXm]fY`YghfUW]`
bUd]`]`df`XCk`cfUn`žhc`[`fUZ]Y`nVUXUbmV`c`[`fUb]Vmb]_Ck`"
""DfnYV]Y`[`]`_f`n`k`mV`n`f`mg`")`U`d`c`k`]Y`f`X`n`U`^`df`U`k`]X`č`k`c`Xn]UŰb]U`c`[`fUb]Vmb]_U`C`6C`
J`&`!`6ž`7`#`f`f`ž`=>`dfnma`U`_gma`U`bY`^`k`Ufhc`V]`_]a`d`df`Xi`i`XUfck`Y`[`c`c`_gnhUŰ]Y`%\$#`)`ž`
bUhca`]Ugh`bU`dcXghUk`]Y`dc`_UnUbY`^`bU`fmg`")`V`žhc`[`fUZ]`hY`[`c`GD8`a`c`bU`k`b]cg`ck`U`ž`Y`
dcŰ`V]Yb]U`ghm`ck`Y`k`_ŰXY`_`GD8`n`Y`[`c`dcXghUk`g`n`V`m`h`a`U`č`c`XdcfbY`bU`hU`]Y`df`Xm`
_`bUWY`^`Y`gh`k`dfnmdUX_i`_f`n`k`mV`n`f`mg`"*`ž`XcmV`V`W`c`[`fUb]Vmb]_U`9H`+`H97`K`9BH`HB7`f`f`
ž`=>`"Dfnmidf`Xn]Y`ž`)`_]a`d`1`*`ž`&`)`_5`c`[`fUb]Vmb]_`hY`b`Xn]UŰ`Y`gnV]Y`dfUk`]X`č`k`c`ffmg`"*`U`ž`
U`Y`i`dfnmidf`Xn]Y`ž`+`)`_]a`d`1`-`ž`+`_5`i`U`k`b]U`^`g`]`n`U`k`]g`_Už`_`hCŰY`dc`VmUg]Y`h`1`&ž`+%`
a`g`fU`_dc`_UnUbc`bU`fmg`"*`V`i`V`dc`VmUg]Y`h`1`)`ž`%`a`g`fU`_a`]U`č`hc`a`]Y`gW`k`dfnmdUX_i`
Xk`i`dcncghUŰmV`dfCŰY`_L`dfck`UXn`Xc`nb]gnV]Yb]U`GD8`ž`V`dc`_UnUbc`bU`fmg`"*`X`"

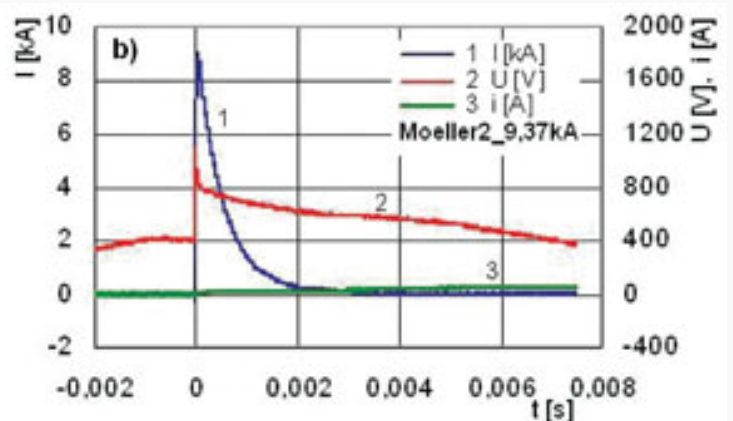
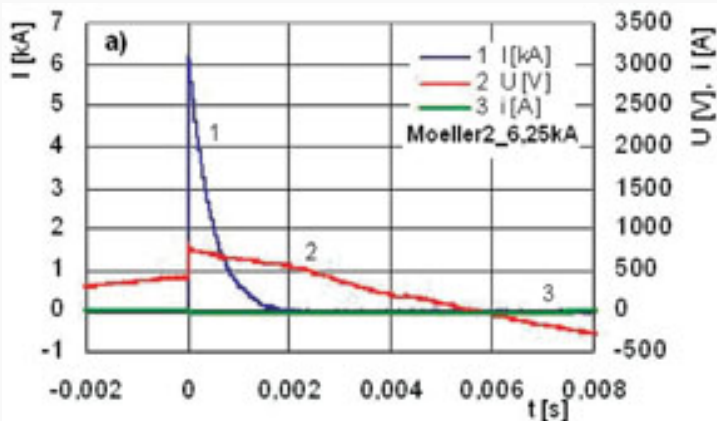


Fmg") ""=i ghfUWU`k`nb_]Ck `VUXUb]U`c[fUb]Vmb]_U`Z]fa`mC`6C`69HH9FA`5BB. `U`L`dfnYV]Y`[`]`bUd]`V]U`
df`Xi`dfnmi`XUfnY`%\$#`)`\$`c`k`Ufhc`V]`gnVmtck`Y`^`+`ž`_5ž`V`L`žhc`[`fUZ]U`g`i`h`Ck`c`Xn]UŰk`Ub]U`
df`Xi`bU`ghm_]`GD8`"

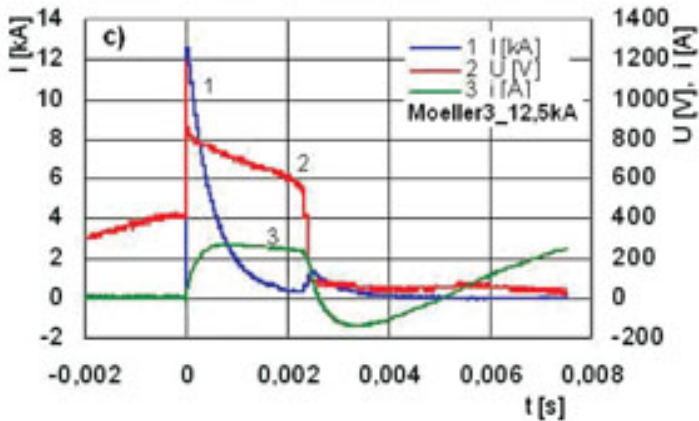
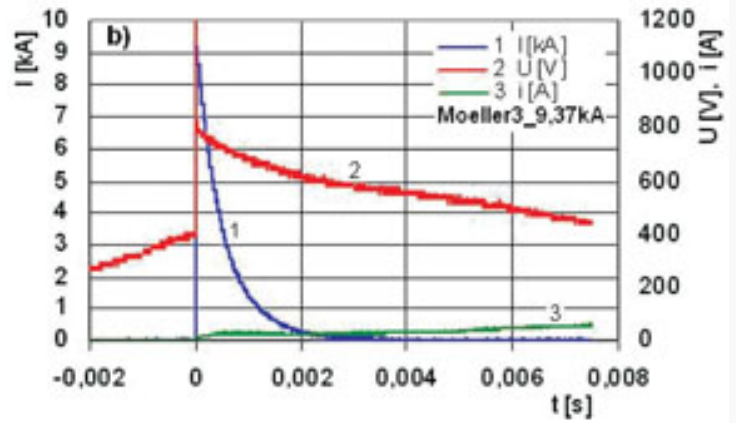
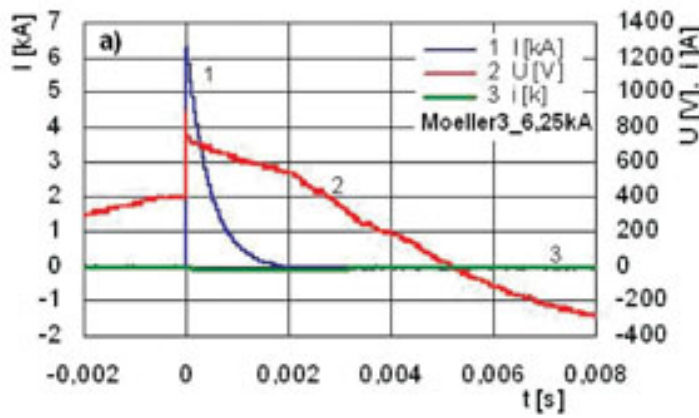


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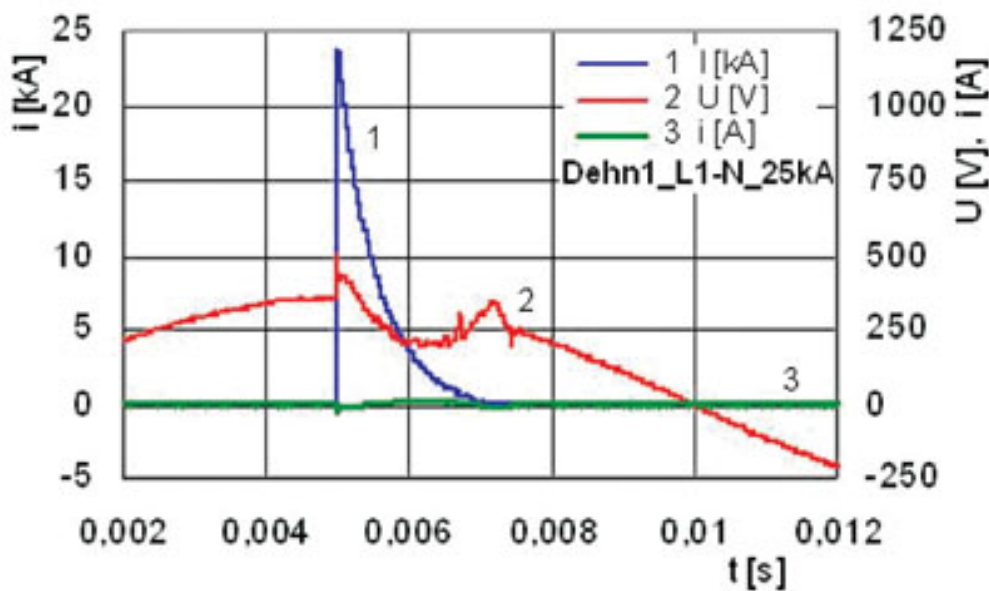
.....DcXcVb 'gnri UW' cVgYfk i 'Y'g] 'k' d'fnmdUX_i 'c[fUb]Vmb]_ČK 'GD6!%&#&, \$'f=ž' =Ł'ZJfa m AC9@@9F'ffmg'+], Ł' D'fnmidf Xn]Y'\$ž) =]a d'1 '* ž&) _5'c[fUb]Vmb_] 'hY[c' hmdi 'Xn]UŰ^ 'YgnVŸY'dfUk]Xčck c'ffmg'+U'], UŁž'U'Y'Ű' d'fnmidf Xn]Y'\$ž+) =]a d'1 '- ž' +_5' i'Uk b]U^ 'g] 'n'Uk]g_Už'_hČEY'a c['idck cXck U'U'Vc'dfnYfk Ub]Y'cVk cXi 'bUk Y'hdc'h1' '%\$'a g'fXŰ' gnma' b] 'dc_UnUbc'bU'fmg'+V'], 'VŁž'U'Vc'! d'fnmidcXb]Yg]Yb]i 'df Xi 'Xc'k Ufhc VŸ =]a d'1' '%&ž) _5' !' i gn_cXnYb]Y'GD8' dc'VŰUg]Y'h1' '&ž('a g'ffmg'', W]XŁž'U'bUgh db]Y'dfnYfk Ub]Y'cVk cXi 'BUhca]Ughni dYŰb]Y']bbU'gnri UWU'Ygh'k' d'fnmdUX_i 'c[fUb]Vmb]_ČK 'hmdi' (8J' HB7' &)) =ž' = ZJfa m89<B' / Gx < B9''>U'_dc_UnUbc'bU'fmg'' - ž'X'U'hY[c' hmdi 'GD8' c'_UnUŰg] 'ni dYŰb]Y' b]Y[fc' bmi XUf'df' Xck mic'_gnHUŰVŸY%\$#') \$']'c'k Ufhc VŸ gnVntck Y^ =]a d'1' '&') _5ž'_hČEU'Ygh' !'U'_Űh'k' c'nUi k U m' !'U' 'Xk U'fUnmk] _gnU'b] 'bU'k] _gnU'gdc' fČE'UbU'c' []VmbmVŸ'k Ufhc VŸ dcncghUŰmVŸ'c[fUb]Vmb]_ČK '' UXbU'n'VUXUbmVŸ'dfČEY'_hY[c'c[fUb]Vmb]_U'b]Y'k m_UnUŰ' dcXVŰUg'dfČE'U'_jVŸ'_c'k]Y'_b]YdfUk]Xčck c' VŸ'



Fng*** "7\UfU_hyfngrm_]GD8 ZJfa mAC9@@9F'fdČE'_U'&Ł'nUfY^Yghfck UbY'dfnmi XUfnY%\$#') \$'c'k Ufhc VŸ gnVntck Y^ UL* ž&) _5žVŁ'- ž +_5' fi gn_cXnYb]YŁ'



Fng", "7\UfU_hyfnglm_]GD8`Zjfa mAC9@9F`fdC_U` ŁznUfY`Yghfck UbY`dfnmi XUfnY`%\$#') \$`c`
k Ufhc` WgnWntck`Y^`Uk`*`ž&` _5žVŁ`-`ž` +`_5`]`WŁ`%&ž` _5`fi`gn_cXnYb]YŁž`cfUn`XŁ`Zchc`[fUZ]U`
i`gn_cXncbY`[c`GD8`

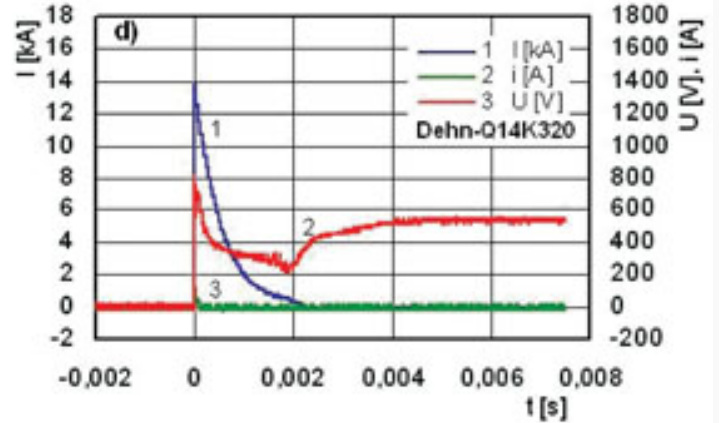
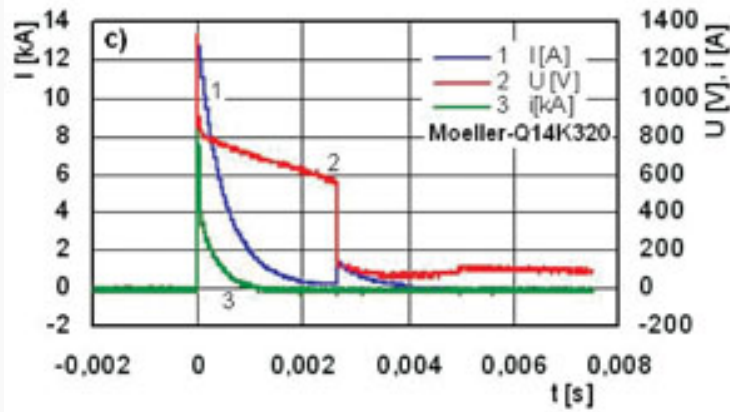
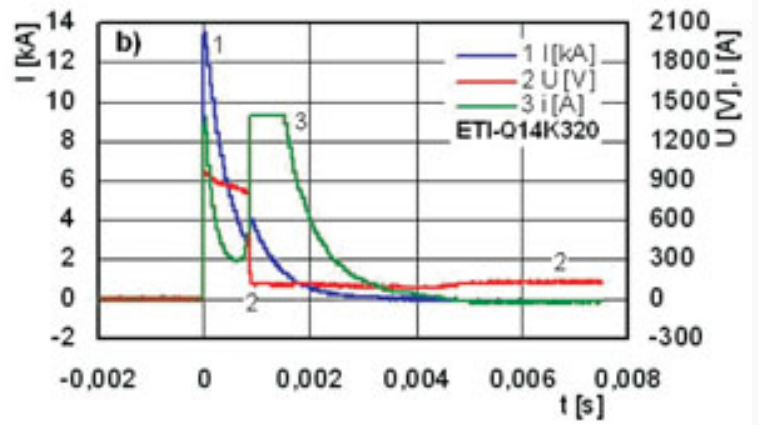
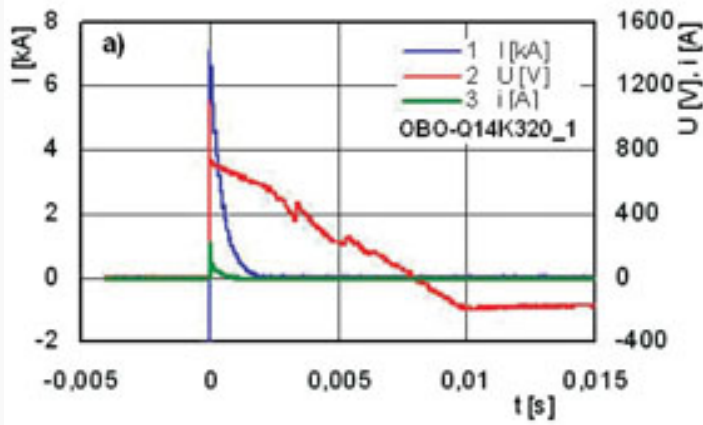


Fng"- "7\UfU_hyfnglm_]GD8`Zjfa m89<B/`Gx`<B9ž`nUfY`Yghfck UbY`dfnmi XUfnY`%\$#') \$`c`
bU`k`m`gnY^XY`_Ufck`UbY^k`Ufhc` WgnWntck`Y^&`)_5`

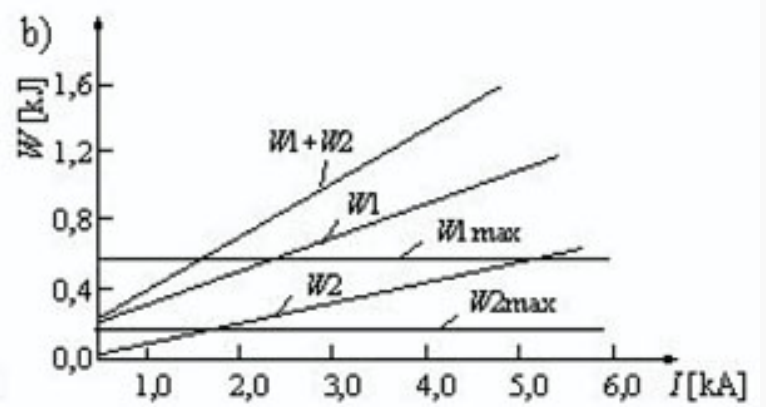
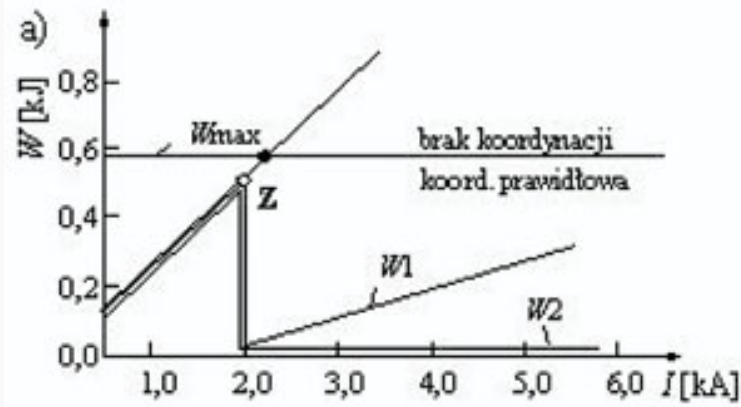
TABLICA 3. Wyniki próby działania

| Dane SPD | | OBO V25-B+C/3 (I+II) 1 | ETITEC - WENT TNC (I+II) 3 | MOELLER SPB-12/280 (I+II) 2 i 3 | LEUTRON PowerPro BCD 25kA (I+II+III) | DEHNventil DV TNC 255 I+II 3 | |
|--|---------------------|------------------------------|----------------------------------|---------------------------------------|---|------------------------------------|-------|
| katalogowe | I_{imp} [kA] | 7,0 | 12,5 | 12,5 | 25 | 25/75 | |
| z pomiarów | $0,5 I_{imp}$ [kA] | 3,62 | 6,37 | 6,24 | 6,26 | - | 13,0 |
| | $0,75 I_{imp}$ [kA] | 5,39 | 9,24 | 9,15 | 9,28 | - | 19,8 |
| | I_{imp} [kA] | 7,23 | 12,15 ¹⁾ | - ²⁾ | 12,6 ³⁾ | - | 24,8 |
| | Q [As] | 3,21 | 6,66 ¹⁾ | 5,2 ²⁾ | 6,82 ³⁾ | - | 13,2 |
| | W/R [kJ/Ω] | 12,5 | 41,3 ¹⁾ | 22,9 ²⁾ | 43,8 ³⁾ | - | 171,0 |
| Uwagi: ¹⁾ defekt warystora po 2,75 ms; ²⁾ defekt warystora i przerwanie obwodu po 10 ms; ³⁾ defekt warystora po 2,4 ms i przerwanie obwodu. | | | | | | | |

8mgdcbck Ub]Y`hm_c`^YXbma`Y[nYa`d`UfnYa`dfCEV_]`c[fUb]Vmb_]`CK`hmdi`Ž`Ž`==`Dck`YfDfc`678`&)`_5`Z]fa`m@9I`HF`CB`c`UnUc`g]`Vm`VufXnc`d`YVW`ck`Y``>U`_i`k`gdca`b]Ubc`ž`dfCEV`_U`HU`i`Y[`U`i`gn_cXnYb]i`i`b`U`dcVh`h`i`k`gh`dbY[c`_cbXmWcbck`Ub]U`]b]Y`Vm`c`a`c`]k`c`V`Y`dfnYdfck`UXnYb]U`dfCEV`Xn]U`U`b]U`]Xc`cbUb]U`c`W`bmi`hY[c`hU`_nU[`UX`ck`Y[c`f`cnk`_nUb]U``?`ca`Ybhi`^`WnYghUk]cbY`k`hUV````k`mb_]`dca`]Uf`CK`ž`U`k`gnVhY[`CEbc`V`Y`dfnYXghUk]cbY`bU`fmg``)``!`-`_f`nmk`Y`ž`bU`Y`min`Ui`k`U`m`ž`Y`VUX`UbY`c[fUb]Vmb_]`hmdi`Ž`Ž`==`b]Y`nUk`]YfU`^`W`Y`Ya`Ybh`CK`i`V`bU`^`V`m`V`a`c[`Vm`]bgh`U`ck`UbY`bU`[fUb]V`h`ghfYZ`@DN\$5`]`@DN%`hm_c`k`CK`V`U`g`ž`[`X`m`df`X`mi`X`U`f`ck`Y`c`_`gn`h`U`U`V`Y`%`\$`#`)`\$`k`a`]Y`g`W`nU]bgh`U`ck`Ub]U`b]Y`V`X`dfnY`f`U`V`U`U`m`nb`U`V`b]Y`k`U`f`hc`V`Y`=]a`d`1`+`_5``>Y`Y`]gdcXn]Yk`UbY`g`k`]_gnY`k`U`f`hc`V`Y`df`X`CK`i`X`U`f`ck`m`V`ž`h`c`a`i`gn`Vm`V`f`UbY`dcX`i`k`U[`c[fUb]Vmb_]`n`Y`Ya`YbhUa`]i`V`bU`^`V`m`a`ž`_`h`CE`Y`k`m`Uni`^`Y`d`gn`Y`k`U`V`k`c`V`_`cc`f`X`nb`U`V`b]Y``K`U`f`m`gh`c`f`ck`Y`GD8`hmdi`Ž`Ž`==`g`k`h`ma`d`fn`md`UX`i`b]Y`k`U`V`k`Y`]`h`c`!`k`V`f`Y`k`g`i`[`Y`gh]`ca`b]Y`_`h`CE`m`V`U`i`h`c`f`CK`i`i`V`c`Z`Y`f`Y`bh`CK`GD8`!`V`Y`n`k`n[`Xi`b`U`f`c`X`n`U`^`W`f`cb]cbY[c`c`v]Y`h`f`b`]Y`gn`_`U`b`m`ž`d`fn`Ya`mg`U`ck`n`k`Gd`ch`m`_`UbY`V`f`Un`V`h`V`Y`^`gd`Y`i`U`W`Y`X`ch`m`V`h`V`_`c`f`n`m`gh`b`m`V`d`c`X`n]U`U`CK`d`f`Xi`d]c`f`i`b`ck`Y[c`^`Y`gh`b]Y`d`c`f`c`n`i`a`]Y`b]Y`a`ž`[`X`m`k`k`]Y`i`d`fn`md`UX`_`U`W`_`gn`h`i`U`W`U`a`c`Y`Vm`c`X`k`f`cb`U`]`bU`]bgh`U`U`W`a`c`Y`d`fn`md`UX`U`X`c`+\$`i`d`f`Xi`d]c`f`i`b`ck`Y[c`O`(%`O`%`O`Q`N`_`c`Y`]nUk`m`Ub]Y`c`V`Y`U`bc`V`Y`d`f`X`ck`Y`^`GD8`X`c`%`&`ž`)_5`ž`V`m`i`gd`f`c`gh`U`d`c`gh`U`b`ck`]Y`b]ca`b`c`f`a`O`Q]O`%`O`k`b`U`X`n]Y`]bU`_`c`f`n`m`gh`b]Y`g`n`m`b]`d`fn`Y`V`Y`h`b`m`f`c`nd`u`nk`d`f`Xi`^`Y`gh`b]Y`f`n`Y`h`Y`bc`V`Y``B`U`Y`m`k`_`U`X`m`a`d`fn`md`UX`i`f`Y`U`b]Y`c`W`b]U`f`c`nd`u`nk`d`f`Xi`"



Fng"%\$ "Dfnm UUXmW UfU_hyfnglm i nng_UbnW dcXWUg'dfCV'_ccfXnbUWmbnW k UfnglcfU'hndi E % ? ' & \$ 'nGD8 Zjfa m UL'C6C'69HH9F A 5BzVŁ 9H-H97zVŁ A C9@9F zXŁ 89< B/ GC< B9'



Fng"%\$ "NUgUXmYbYf[YhmMbY^_ccfXnbUW] GD8. UL'hndi '%f]g_Yfb_Ł']hndi '&fk UfnglcfŁzVŁ'hndi '%fk UfnglcfŁ']hndi '&fk UfnglcfŁ'

TABLICA 4. Zestawienie badanych układów ich parametrów i wyników prób

| Dane SPD | OBO V25-B+C/3 + Q14K320 | ETITEC – WENT TNC + Q14K320 | MOELLER SPB-12/280 + Q14K320 | DEHNventil DV TNC 255 + Q14K320 |
|----------------------------|-------------------------------|--------------------------------|------------------------------------|---------------------------------------|
| I_{imp} deklarowane [kA] | 7,0 | 12,5 | 12,5 | 25 |
| I_{imp} zmierzone [kA] | 6,96 | 13,4 | 12,6 | 13,8 |
| Q [As] | 3,2 ¹⁾ | 5,63 ²⁾ | 6,81 ²⁾ | 7,34 |
| W/R [kJ/ Ω] | 12,0 ¹⁾ | 41,3 ²⁾ | 43,8 ²⁾ | 51,4 |
| $U_{var\ max}$ [kV] | 0,74 | 1,07 | 1,32 | 0,82 |
| $I_{var\ max}$ [kA] | 0,263 | 1,5 | 0,85 | 0,65 |
| $t_{ivar(def)}$ [μ s] | \approx 600 | 850 | 2610 | \approx 20 |

Uwagi: 1) wartości krytyczne; 2) wartości powodujące uszkodzenie

6UXUb]U_ccfXmbUWmbY

.....C [fUb]Vmb_] hmdi 'ž =dck]bbm'n'Uč Yb]U'W'fcb] 'g_i hYVmb]Y'dfnmü VmbY'Xc'jVW' nUW]g_Ck 'i fn XnYb]U''5VmigdfUk Xn] 'ghcd]Y 'hY^g_i hYVmbc Vž'dcghUbc]cbc'nVUXU 'i _dUXž' k _hCfma 'i fn XnYb]Ya 'W'fcb]cbma 'VmüXcXUh_ck mc [fUb]Vmb_] 'k Ufmgfcbck m'hmdi '9D7CG' E%(' &\$ž'c'a U_gma U'bma 'df Xn]Y'k mUXck Vma 'a ui '1', '5'f| #&\$ž'bUd] V]i 'fcVcVma ' ' &\$'J 'fk Ufhc 'g_i hYVmbUč]'dcn]ca]Y'cVW'fcbmž, ('_J''C'W'fcb 'hY[c'k UfmgfcbU'ghUbc]]m c [fUb]Vmb_] 'k mgnV]Y [Cb]cbYž'k fUn'dcXUbra]'k mb_]Ua]'VUXU ž'k 'hUV'' ('DcXXUbY'VUXUb]ca 'i _dUXmVm'minUg]UbY'bUd] V]Ya 'Xcghcgc]k Ubma 'Xc'bUd] V]U'hfk Uč^ dfUW]k UfmgfcbCk 'i W'8c'i _dUXi 'c [fUb]Vmb_] Ck 'Xcdfck UXnUbc'i XUfmdf 'Xck Y'%'\$#) \$'c' k Ufhc V]UW 'a dž'nV] 'cbmV 'Xc'XY_'Ufck UbmVž'n'k m' h_]Ya 'i _dUXi 'n'c [fUb]Vmb_]Ya ' 8Y\bj Ybh]'8J 'HB7 '&)) ž'X'U_'hCfY [c'dfnm' hc'df 'X'bU'dcn]ca]Y'dcfCk brk U'bma 'n'df 'XYa ' k 'Xk i]'bbmV 'c [fUb]Vmb_]UW''Dca]Ufmdf 'Xc' 'Xc_cbrk UbY'Vm'minU'dca cW'd h]'DYUfgcbU'%'&' ž'U'bUd] V]U'bU' W'fcb]cbma 'k UfmgfcbfnY!'nU'dca cW'gcbXmDD9' ('_J''A]YfncbY'k Ufhc V]fY'Yghfck Ubc'nU' dca cW'cgVh'cg_cdi 'hmdi 'HY_hfcb]i 'H8G']'k dfck UXnUbc'Xc'k gdCdfUW^ W[c'_ca di hYfU'' K mb_]dca]UfCk 'g 'nYghUk]cbY'k 'hUV'' (']'n]i ghfck UbY'bU'k m_fYgUW 'n'fmg''%'\$''DfnYX'g_ca Ybck Ub]Ya 'hmV 'k mb_]Ck 'k Ufhc'gcV]Y'i 'k]UXca] ž' Y'k Ufi b_]_ccfXmbUW] nUY 'cX'hmdi 'j'dUfUa YhfCk 'k gdCfXn]Uü^ VmV 'GD8' O' O' O' O' O' K 'i _dUXn]Yž'k _hCfma ' Y'Ya Ybhi V]bU^ VmighUbc]]d]Yfk gnmighcd]Y 'cVW'fcbmž'k Ufmgfcb'Xfi []Y[c'ghcdb]U'Ygh' cVW] UbmVUčck]h 'YbYf[] 'ZU]'dfnYd] V]ck Y^Xc'W'k]]'nUXn]Uü]b]U'Y'Ya Ybhi 'i V]bU^ W[c' fdi b_h'N'bU'fmg''%'\$%'>Y 'Y]'b]Y'Ygh'k 'ghUb]Y'dcV'čb 'hY^YbYf[]]'hc'i 'Y[U'i gn_cXnYb]i '' DfUk]Xčk U'_ccfXmbUWU'dc'Y[U'k] WbU'nUdYk b]Yb]i 'nUXn]Uü]b]U'Y'Ya Ybhi 'i V]bU^ W[c' dfnYX'dcV'čb] V]Ya 'dfnYn'k Ufmgfcb'Xcdi gnVU'bY^X'U'b]Y[c'YbYf[]]'K a UI ''BUhca]Ugh'k 'i _dUXn]Yž'k _hCfma 'd]Yfk gnmighcd]Y 'cVW'fcbmighUbc]]fCk b]Y 'k Ufmgfcbž'hc'YbYf[]U'ZU]' dfnYd] V]ck Y^Ygh'dcV'čb]UbU'cX'gUa Y[c'dcVh 'h_i 'k 'cXdck]YXb]Y^dfcdcfV]K %K & fhk m_Y'K %2K &'dfnYn'cVU'k UfmgfcbmK %ž'K &'ffmg''%'\$%'>Y 'Y]'_hCfm 'n'b]V' b]Y'Ygh'k ' ghUb]Y'dcV'čb 'dfnmdUXU^ W^bU'b]Y[c'YbYf[]]'ž'hc'i 'Y[U'i gn_cXnYb]i '' DfUk]Xčk U'_ccfXmbUWU'dc'Y[U'k] WbU'nUXVUb]i ž'VmigdcXn]Yk UbU'YbYf[]U'k 'a]Y'gW 'nU]bghU'ck Ub]U'

i _dXi 'b]Y VmU'k] _gnU'b] 'gi a U'YbYf[]] K %a ul 'Z 'K &a ul 'cfUn'VmYbYf[]U VmU' dfUk]Xčck c'
dcXn]Y'cbU'bU'YbYf[] 'K %]'K &'
''''K 'fcndUhfnc UbmVX 'i _dXUW 'gnri UWU 'Ygh'b]YVč 'VUFXn]Y^'nč cbUž[X'm 'ghcd]Y 'd]Yfk gnm
ghU'bcck]GD8 'hmdi 'ž ==' C [CEB]Y 'YXbU_ 'ghk UfnU'cb ũ[cXb]Y^'gnY'k Ufi b_] 'X'U'ghcdb]U'
Xfi []Y[cž_ hčFY 'nUY 'cX'hy[cž Vm'ghcd]Y 'd]Yfk gnmnUk]YfU'Y'Ya Ybhi VybU^ Vmž Vmmb]Y''
>U_ 'k]XU 'n'fmg" %\$U']Xž Vfu_ 'Y'Ya Ybhi 'i VybU^ VV[c'k 'ghcdb]i 'd]Yfk gnma 'ghk UfnU'a b]Y^'
cfmghbY'k Ufi b] 'X'U'ghcdb]U'Xfi []Y[c''K 'd]Yfk gnma 'i _dXn]Y 'ffmg" %\$Uč 'dfnYdčnk 'df Xi '
k 'k Ufmg'hcfnY 'ghcdb]U'Xfi []Y[c' hfk U'c_ ""* \$ \$ 'a gž'bU'ca]Ugh'k 'i _dXn]Y'Xfi []a 'ffmg" %\$ Xč'
i 'Y[U'cb_g_fčVb]i 'U 'Xc'c_ ""&\$ 'a g''B]Wk] WXn]k bY[cž 'Y'k 'd]Yfk gnma 'i _dXn]Y'k Ufmg'hc'
ghcd]U'Xfi []Y[c'cg] [b_ü_fnmVmbY'k Ufi b_] 'YbYf[YhmVmbY]'hm_c' Vm'U'gnVh ']k mi
dfnmU'XY_ 'nfn Xn]ž 'Y'b]Y'ncghUčb'i gn_cXncbm'K 'dcncghUčmVX 'Xk čVX 'i _dXUW 'ffmg" %\$V'
Vč'hu_]Y[c'gnVh ']k Y[c'dfnmU'X_i 'b]YghYhmb]Y'cXbččck Ubc]'cVU'k Ufmg'hc'fmi 'Y[ũi
i gn_cXnYb]i ""BUgh d]č'hc'k 'i _dXn]Y'k Ufmg'hc'fU'E %('?' &\$ 'n'GD8 '9H+97!K 9BH'HB7 'fčž 'č'
dc' VmUg]Y'h_uffXYž '1 ,) \$ 'a g'fHU' ""(']fmg" %\$Včž 'U'k 'i _dXn]Y'n'GD8 'A C9@9F 'GD6! %&#&, \$'
fčž 'č' ! 'dc' VmUg]Y'h_uffXYž '1 &* %\$ 'a g'fHU' ""(']fmg" %\$Včž ' >U_ 'k]XU ž'dfUk]Xčck Y'
g_ccfXnbck Ub]Y'YbYf[YhmVmbY 'fcX_čK 'cV'fcbma U'nUgUXb]VhY 'nbU'VhYb]Y''

K b]cg_]]dcghi 'Uhm

''''DfnYdfck U'XncbY'k 'Ufmi_ 'Y']'k gdUfhY'k mb_Ua]'VUXU 'fcnk U Ub]U'dcnk U'U^ '
gZcfa i čck U 'k b]cg_] 'XčmVh VV'nUfčK bc 'VUXUbmVX 'GD8ž 'U_]'VUFXn]Y^'c [CEBYž'XčmVh VV'
XcVcfi]'ghc'gck Ub]U'GD8ž 'U'hu_ 'Y'dcghi 'UhmXčmVh VV'dcghU'bcck]Y 'bcfa Uhmk bmVX 'n'hy[c'
nU_fYgi ''
''''K 'cXb]Yg]Yb]i 'Xc'VUXUbmVX 'GD8'k b]cg_i 'Y'g] ž' Y.
! 'n[cXbc 'dcn]ca čK 'cV'fcbm'n'XY_ 'UfUWJa]'dfcXi VVbhčK 'k m_ Uni ^ 'c [fUb]Vmb_] 'GD6!
&#&, \$ fčž 'č' Z]fa m'AC9@9F]'c [fUb]Vmb_] '8J 'HB7 &)) ž == Z]fa m'89<B/ Gx <B9/
! 'n[cXbc 'cXdcfbc VV'df Xck Y^'i XUfck Y^' %\$#) \$ 'n'XY_ 'UfUWJa]'dfcXi VVbhčK 'k m_ Uni ^ '
c [fUb]Vmb_] '8J 'HB7 &)) ž == Z]fa m'89<B/ Gx <B9'cfUn'c [fUb]Vmb_] 'J &) ! 6ž 7# 'fčž 'č'
Z]fa m'C6C '69HH9FA5BBž_ hčFY 'YXbU_ 'a U^ 'gU'Vmdi b_h'bU'ghm_i 'k _dXY_ 'n'dcXghUk /
! 'n[cXbc 'cXdcfbc VV'df Xck Y^'i XUfck Y^' %\$#) \$ 'n'XY_ 'UfUWJa]'dfcXi VVbhU'c [fUb]Vmb_] U'
Dck Y'fDf'c'678 &) _5 fčž 'č' ž == Z]fa m'@9I 'HFCB'b]Y'a c [ũ'Vm 'dčK]YfXncbU'nY'k n['Xi '
bU'Y[c'i gn_cXnYb]Y'dcXVhUg'k gh dbY[c'_cbXmVcbck Ub]U/
! 'gdYčb]Yb]Y'k Ufi b_čK '_ccfXnbU'VhbmVX 'nUdYk b]U'c [fUb]Vmb_] '8J 'HB7 &)) ž == Z]fa m'
89<B/ Gx <B9']'k 'c [fUb]Vmbma 'nU_fYg]Y'c [fUb]Vmb_] 'J &) ! 6ž 7# 'fčž 'č' Z]fa m'C6C '
69HH9FA5BB /
! 'nU'Včck Ub]Y'g] 'dfčVY_ 'k ' _U Xma 'nYghUk]Y'XUbY^Z]fa m'Ygh'b]Ya U']XYb'hmVmbYž'Vč'
k g_ Uni 'Y'bU'dck hUfnU'bc ']VX 'VWV 'cfUn'k Ufi b_čK 'dfcV]YfVh'Vh''
''''I c [CEB]U^ 'Wk mb_] 'dfčV']'dfnYdfck U'XncbmVX 'fcnk U U ž'k b]cg_i 'Y'g] ž'Vm
! 'k 'hfcgV'c'k ũ VV'k mXcVč'GD8]'_ca Zcfh]VX 'bUVmk VčK ž'XUbY_ 'UhU'c [ck Y'GD8 'fčVYVh]Y'
b]YdYčbYč'nUk]YfUčm'gnVhY[ččck Y]bZcfa UWY'XčmVh VV' ghfi _hi fnž'gVX'Ya Uhi 'dcū VhY '
Y'Ya YbhčK 'g_đXck mVX ž'nUgUXmiXn]Učb]U']'k gnmgh_]VX 'dUfUa YhfčK ž'U'k] W]bZcfa UWYž'
_hčFY'b]Y'a c ['Vm]'XYb'hmž_čck UbY'n'XUbma]'hV'Vbc'c []Vmbma]]'cVY'a ck UbY'hu'Ya b]W '
'UbX'ck /
!]bZcfa UWY'XčmVh VV'GD8 'hmdi 'ž ==]'hmdi 'ž == ž == nUk]YfUčm'k mfU bY'ghk]YfXnYb]Yž' Y'
c [fUb]Vmb_] 'hY'g 'dfnYnbU'VhcbY'Xc']bghU'ck Ub]U'k 'b]Yk]Y_]Y^'cX'Y[čč VV'cX'VX'fcb]cbY[c'
cV]Y_hi ž'U'Y 'Y']'g]bghU'ck UbY'k 'dcV'] i 'nū VhU]bghU'UW]'Y'Y_hf'nmVmbY'ž'hc'b]Y'VX'fcb] '
k gnmgh_]VX 'dfnmū VhcbmVX 'Xc'b]Y^'i fn XnY 'Y'Y_hf'nmVmbmVX]'Y'Y_hf'cb]VhbmVX /
! 'k gnmgh_]Y'c [fUb]Vmb_] 'hmdi 'ž == ž' dfnYnbU'VhcbY'Xc']bghU'ck Ub]U'k 'nū VhU]bghU'UW]
Y'Y_hf'nmVmbY^'cV]Y_hi 'k mčcgU cbY[c'k '@DGž'nUk]YfUčm'Y'Ya Ybhi VybU^ Vmž
! 'c [fUb]Vmb_] 'hmdi 'ž == ž'b]Y'nUk]YfU^ VV'Y'Ya Ybhi 'i VybU^ VV[cž Vm'ū]bghU'ck UbY'k '
a]Y'gVWVž [Xn]Y'df Xmi XUfck Y' %\$#) \$ 'b]Y'dfnY_fU'VhU^ 'nbU'Vh]Y'dcn]ca i '=ja d'1 '+_5/
! 'c [fUb]Vmb_] 'hmdi 'ž == ž == ž_ hčfmVX 'ghc'gck Ub]Y'b]Y'n'bU'Xi 'Y'fU'WcbU'bY[c'i nUgUXb]Yb]U'
hV'Vb]VhY[cž Vm'ū k mVčZUbY'n'cZYfh'fmb_čck mVX''

.....K`cXb]Yg]Yb]i`Xc`dcghUbck]Y`bcfa Ulnk bmW`dcghi`i`Y`g] ž`Vm`
!`c[fUb]Vmb]_]`_ca V]bck UbY`hmdi`ž`==ncghUmicV^ hY`_UgmZ]_UW`nUk Ufh`k`
dcghUbck]Yb]UW`(`bcfa mO+Q`U`c[fUb]Vmb]_]`hmdi`ž`ž`==!`nXmg_k U`]Z]_ck UbY/
!`k ma U[Ub]U`ghUk]UbY`c[fUb]Vmb]_]`_ca V]bck Ubma`hmdi`ž`==cfUn`dfCE/mi_ccfXmbUWmbY`
GD8`ncghUmicV^ hY`VUXUb]Ua]`hmdi`k [`dcghUbck]Y`+`bcfa mO+Q`
!`cV`][Uhcfrm]Y`k ma U[UbY`k`dcghUbck]Yb]UW`*`bcfa mO+QXUbY`ncghUmi ni dYUb]cbY`
]bZcfa UWUa]`XchmW`Wra]`Vi Xck nž`nUgUX`Xn]UdUb]U`]gWYa UhCE`ghfi`_hi fU`bmW`GD8"

DfcZ`XF`\UV``]b`"NXcVmgUk`:]gck g_]`
A [f`]b`"8ca]b]`?fUgck g_]`
Dc`]hYVb]_U`K UfgnUk g_U`

@]hYfUhi fU`

O%Q9B`*`%*`(`!`%%`&\$`\$`&`" `@ck !j c`hU[Y`gi f[Y`dfchYVmj`Y`XYj]Wg`DUfh`%%`Gi f[Y`dfchYVmj`Y`
XYj]Wg`VcbbYVWYX`hc`ck !j c`hU[Y`dck Yf`gmghYa`g!`F`Yei]fYa`Ybhg`UbX`hYghg`fH8H`n`O+Q`
Q&Q9B`*`%*`(`!`%%`&\$`\$`&`ž`df5`%%`&\$`\$`*`@ck !j c`hU[Y`gi f[Y`dfchYVmj`Y`XYj]Wg`DUfh`%%`Gi f[Y`
dfchYVmj`Y`XYj]Wg`VcbbYVWYX`hc`ck !j c`hU[Y`dck Yf`gmghYa`g!`F`Yei]fYa`Ybhg`UbX`hYghg`
ffCE`bU`cX`O%Q]`O+Q`
O`Q9`f`Yf`>`ž` ; a`Y`W`@`. `HYW`bc`c []Y!`_cbZ]_h`?`ca`V]!`5V`Y]hYf`Z`f`XYb`6`]m!`i`bX`
y`VYfgd`Ubbi`b[ggW`i`m` ; /`<`Bf`(`ž`&\$`\$`(`
Q`Q`:]gck g_]`N`. `DchfnYVU`ghcgck Ub]U`]cW`bU`g_i`hYVmbc`W`cW`fcbm]bghU`UW]`Y`Y`_hfmVmbmW`
cX`dfnYd]`Uha`cgZYfmVmbmW`"9`Y`_hfc]bghU`Uhc`f`&\$`\$`fk`Xfi`_i`Ł`
Q`Q`=97`*`\$`*`(!`!)`'` .`&\$`\$`" `9`Y`VW]W`]bghU`Uh]cbg`cZ`Vi`]X]b[g!`DUfh`!)`'` .`GY`YV]cb`UbX`
YfYV]cb`cZ`Y`VW]W`Yei`]da`Ybh!`=gc`Uh]cbž`gk`]hW]b[`UbX`Vc`bhf`c`!`5a`YbXa`Ybh`%`F`Yj`]g]cb`
cZ`7`Ui`gY`)'`(`. `8Yj`]Wg`Zcf`dfchYV]cb`U[U]bgh`cj`Yfj`c`hU[Yg`
O`Q`=97`*`%*`(`!`!`%&.`&\$`\$`)" `@ck !j c`hU[Y`gi f[Y`dfchYV]cb`XYj]Wg`"Gi f[Y`dfchYV]cb`XYj]Wg`
VcbbYVWYX`hc`ck !j c`hU[Y`dck Yf`X]ghf]Vi`h]cb`gmghYa`g!`DUfh`&.`GY`YV]cb`UbX`Udd`]W]h]cb`
df]bV]d`Yg`
O+Q`=97`*`%*`(`!`!`%`&\$`\$)`9X`&`" `@ck !j c`hU[Y`gi f[Y`dfchYV]Y`XYj]Wg`DUfh`%%`Gi f[Y`
dfchYV]Y`XYj]Wg`VcbbYVWYX`hc`ck !j c`hU[Y`dck Yf`gmghYa`g!`F`Yei]fYa`Ybhg`UbX`hYghg`
fH8H`n`O%Q`
Q`Q`=97`*`%*`(`!`!`%%`&\$`\$`" `9X`%" `@ck !j c`hU[Y`gi f[Y`dfchYV]Y`XYj]Wg`DUfh`%%`Gi f[Y`
dfchYV]Y`XYj]Wg`VcbbYVWYX`hc`ck !j c`hU[Y`dck Yf`gmghYa`g!`F`Yei]fYa`Ybhg`UbX`hYghg`
ffCE`bU`cX`O%Q]`O+Q`
O`QDB!`=97`*`\$`*`(!`!(`(!`(!`(`. `%-`-`-`" `=bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUW`Vi`Xck`Ub`mW`" `C`W`fcbU`
X`U`n`UdYk`b]Yb]U`VYnd]YVWY`ghk`U`" `C`W`fcbU`dfnYX`dfnYd]`V]Ua`]" `C`W`fcbU`dfnYX`dfnYd]`V]Ua`]
Uha`cgZYfmVmbma`]"`ü`V]Yb]ck`ma`]"`
O`\$`QDB!`=97`*`\$`*`(!`!(`(!`(!`(`. `&\$`\$`%" `=bghU`U`WY`Y`Y`_hfmVmbY`k`cV]Y`_hUW`Vi`Xck`Ub`mW`"
C`W`fcbU`X`U`n`UdYk`b]Yb]U`VYnd]YVWY`ghk`U`" `C`W`fcbU`dfnYX`dfnYd]`V]Ua`]" `C`W`fcbU`dfnYX`
nU`_CEV]b]Ua`]"`Y`Y`_hfca`U[bY]mVmbma`]"f9A`Ł`k`]bghU`UWUW`cV]Y`_hCE`Vi`Xck`Ub`mW`"
O`%`QDB!`=97`*`\$`*`(!`!)`'`(`. `&\$`\$`" `=bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUW`Vi`Xck`Ub`mW`" `8`cVCE`]"
a`cbhU`k`m`dcgU`Yb]U`Y`Y`_hfmVmbY[c`"i`fn`XnYb]U`Xc`c`W`fcbm`cX`dfnYd]`"
O`&`QDB!`=97`*`\$`*`(!`!)`'`(`. `%-`-`-`" `=bghU`UWY`Y`Y`_hfmVmbY`k`cV]Y`_hUW`Vi`Xck`Ub`mW`" `8`cVCE`]"
a`cbhU`k`m`dcgU`Yb]U`Y`Y`_hfmVmbY[c`"i`n]Ya`]Yb]U`]dfnYk`cXm`cW`fcbY`
O`%`QDB!`=97`*`%`\$`&`(!`!`%`&\$`\$`" `C`W`fcbU`cX[fca`ck`U`cV]Y`_hCE`Vi`Xck`Ub`mW`" `7`n`" `%" `NUgUXm`
c[CEbY`
O`(%`QDB!`=97`*`%`%`&!`!`%`&\$`\$`" `C`W`fcbU`dfnYX`d]cfi`bck`ma`]`ja`di`gYa`Y`Y`_hfca`U[bY]mVmbma`
f@9A`DŁ`"7`n`" `%" `NUgUXmic[CEbY`
O`%)`QDB!`=97`#`H`G`*`%`%`&!`!`%`&\$`\$`" `C`W`fcbU`dfnYX`d]cfi`bck`ma`]`ja`di`gYa`
Y`Y`_hfca`U[bY]mVmbma`f@9A`DŁ`"7`n`" `". `K`ma`U[Ub]U`XchmW`W`i`fn`XnY`Xc`c[fUb]V]Ub]U`
dfnYd]`fGD8Ł`
O`*`QDB!`9B`*`%*`(`!`!`%%`&\$`\$`" `B]g`_cbUd]`W]ck`Y`i`fn`XnYb]U`Xc`c[fUb]V]Ub]U`dfnYd]`" `7`n`
%%`i`fn`XnYb]U`Xc`c[fUb]V]Ub]U`dfnYd]`k`g]YV]UW`f`cnXn]Y`V]mW`b]g_]Y[c`bUd]`V]U`
K`ma`U[Ub]U`]dfCE/mfH8H`n`O%Q]`O+Q`"

0%+QDB!9B`* &' \$)!% &\$\$*`f| ƒ" CWfcbU`cX[fca ck U`!`7n` `%'`NUgUXmic[ŒbY"
0% QDB!9B`* &' \$)!&. &\$\$*`f| ƒ" CWfcbU`cX[fca ck U`!`7n` `&.`NUfn`XnUb]Y`fmm_]Ya`"
0%- QDB!9B`* &' \$)!'. &\$\$*`f| ƒ" CWfcbU`cX[fca ck U`!`7n` `'.`Gn_cXmZ]nm_U`bY`k`
cV]Y_VŴY`]'nU[fc`Yb]Y`mŴU"
Q&\$QDB!9B`* &' \$)!(. &\$\$*`f| ƒ" CWfcbU`cX[fca ck U`!`7n` `(.`I`fn`XnYb]U`Y`Y`_hfmŴbY`]'
Y`Y`_hfc]ŴbY`k`cV]Y_VŴY"