

Protection Types of Relay Protection Devices

There are many types of protective relays, and each one is designed for a specific type of protection. Common types include overcurrent relay, differential relay, distance relay, earth fault ...

There are many types of protective relay functions, but this presentation will focus on the most common type, basic overcurrent device 50/51 (instantaneous and time overcurrent).

What Is A Protective Relay?How Does Overcurrent Relay Work?How Does Directional Relay Work?How Does Differential Relay Work?Percentage-Differential RelaysHow Does Distance Relay Work?How Does Pilot Relay Work?A protective relay is an electronic device used in power systems to monitor and analyze electrical parameters, such as current, voltage, and frequency, and to take action to protect electrical equipment and ensure system stability. Its primary function is to detect abnormal conditions, such as faults, overloads, or imbalances, and then initiate a c...See more on electricalacademia ol#b_results

li.b_ad,ol#b_topw.b_results_eml li.b_ad,ol#b_topw
li.b_ad{background-color:transparent;border-right:0;border-bottom:1px solid
#ebeb; margin-bottom:1px;padding-right:0;padding-bottom:5px}ol#b_results
li.b_adBottom,ol#b_topw.b_results_eml li.b_adBottom{border-top:1px solid
#ebeb;border-bottom:0;padding-bottom:0}ol#b_context li.b_ad,ol#b_rrat_cont
li.b_ad{background-color:transparent}.sb_add cite{text-transform:lowercase}#b_results .b_ad .sb_adTA
.b_caption,#b_topw.b_results_eml .b_ad .sb_adTA .b_caption,#b_results .b_ad .sb_adTA .b_vlist2col
li,#b_topw.b_results_eml .b_ad .sb_adTA .b_vlist2col li,#b_results .b_ad .sb_adTA
.b_factrow,#b_topw.b_results_eml .b_ad .sb_adTA .b_factrow,#b_results .b_ad .sb_adTA
.b_bfactrow,#b_topw.b_results_eml .b_ad .sb_adTA .b_bfactrow,#b_topw .b_ad .sb_adTA
.b_caption,#b_topw .b_ad .sb_adTA .b_vlist2col li,#b_topw .b_ad .sb_adTA .b_factrow,#b_topw .b_ad
.sb_adTA .b_bfactrow{padding-bottom:var(--smtc-gap-between-content-xx-small)}#b_results .b_ad
.sb_adTA .b_vlist2col,#b_topw.b_results_eml .b_ad .sb_adTA .b_vlist2col,#b_results .b_ad .sb_adTA
.b_factrow,#b_topw.b_results_eml .b_ad .sb_adTA .b_factrow,#b_results .b_ad .sb_adTA
.b_bfactrow,#b_topw.b_results_eml .b_ad .sb_adTA .b_bfactrow,#b_results .b_ad
.sb_adig,#b_topw.b_results_eml .b_ad .sb_adig,#b_topw .b_ad .sb_adTA .b_vlist2col,#b_topw .b_ad
.sb_adTA .b_factrow,#b_topw .b_ad .sb_adTA .b_bfactrow,#b_topw .b_ad
.sb_adig{margin-top:0}#b_results .b_ad h3.b_adlabel,#b_topw.b_results_eml .b_ad h3.b_adlabel,#b_topw
.b_ad h3.b_adlabel{margin-bottom:var(--smtc-gap-between-content-xx-small)}.b_ad
.pa_mlo~.sb_adt{margin-bottom:-6px}.b_ad_description{font:var(--bing-smtc-text-global-body3);color:var(--
bing-ads-smtc-desktop-foreground-snippet-default)}#b_content #b_results
li.b_ad.b_adMiddle{margin-top:0;margin-bottom:16px}.b_ad
.b_floatR_img{padding-left:var(--mai-smtc-padding-card-nested-default)}#b_results .sb_add h2: hover
a,#b_topw.b_results_eml .sb_add h2: hover a{text-decoration:underline}#b_results .sb_add

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h2:hover,#b_topw.b_results_eml .sb_add h2:hover{cursor:pointer}.b_ad
li.b_adLastChild{margin-bottom:0}#b_results>li.b_ad{background-color:#fcfaf9}
#b_topw.b_results_eml>li.b_ad{background-color:#fcfaf9} #b_context>li.b_ad{background-color:#fcfaf9}
.b_dark #b_results>li.b_ad{background-color:inherit} .b_dark
#b_topw.b_results_eml>li.b_ad{background-color:inherit}.pa_item .pa_img.white_bg,.pa_hover
.pa_hover_img.white_bg{background-color:#f5f5f5}@media(forced-colors:none){.pa_item .pa_img.white_bg
img,.pa_hover .pa_hover_img.white_bg img{mix-blend-mode:multiply}}.pa_carousel
.b_slideexp{margin-bottom:0}.pa_carousel .b_slideexp
.btn{z-index:8}.pa_carousel_mlo{padding-bottom:var(--smtc-gap-between-content-xx-small)}.b_adBottom
.pa_carousel_mlo{margin:var(--mai-smtc-padding-card-default) 0 0 0!important}.narrpole
.pa_carousel_ml{padding-right:20px}.pa_carousel_mlo.expanded
.pa_carousel_ml{padding-right:var(--smtc-gap-between-content-xx-large)}.pa_carousel_ml
.slide{border-collapse:separate}.pa_carousel_ml .slide.anim{visibility:hidden;animation:slideInFromLeft .05s
cubic-bezier(.3,.5,.1,1) .3s 1 normal forwards}@-webkit-keyframes
slideInFromLeft{0%{visibility:visible;transform:translateX(100%)}100%{visibility:visible;transform:translat
eX(0)}}@keyframes
slideInFromLeft{0%{visibility:visible;transform:translateX(100%)}100%{visibility:visible;transform:translat
eX(0)}}.pa_carousel_ml .slide:focus-visible{text-decoration:underline}#b_content .pa_carousel_mlo
.b_slidesContainer{width:100%}.b_poleContent:has(.pa_carousel_mlo){width:auto}li
.pa_mlo{padding-bottom:0}#b_content ol#b_results li.b_ad,#b_content ol#b_topw.b_results_eml
li.b_ad{border-bottom:0}.b_ad .pa_carousel_ml
.b_adPATitleBlock{padding-left:0}.b_adPATitle{text-overflow:ellipsis;overflow:hidden;white-space:nowrap;
padding-right:var(--smtc-gap-between-content-medium);height:26px;font:var(--bing-smtc-text-global-subtitle
1-strong);color:var(--smtc-foreground-content-neutral-primary)!important;padding-bottom:var(--smtc-padding
-ctrl-sm-text-bottom)}.b_adPATitleBlock{padding-bottom:var(--smtc-gap-between-content-small)}.b_adPAT
itleBlock
.b_floatR{margin-left:var(--mai-smtc-padding-card-default)}.b_adPATitle
a:focus-visible{margin-left:var(--smtc-padding-ctrl-text-side);text-decoration:underline}.b_adPATitle
a{font:var(--bing-smtc-text-global-subtitle1-strong)!important;color:var(--smtc-foreground-content-neutral-pri
mary)!important;vertical-align:text-bottom}.pa_carousel_ml
.b_adPATitleBlock{padding-left:var(--mai-smtc-padding-card-default)}.b_adPATitle_chevron{display:inline-
flex;padding:var(--smtc-gap-inside-ctrl-to-secondary-icon)}.b_adPATitleBlock
acf-badge{display:inline-flex!important}acf-badge{display:flex;align-items:center;inline-size:fit-content;max-
inline-size:100%;gap:var(--smtc-ctrl-badger-gap);padding-block-start:var(--smtc-ctrl-badger-sm-text-padding-to
p);padding-block-end:var(--smtc-ctrl-badger-sm-text-padding-bottom)}acf-badge,acf-badge::before,acf-badge::
after,acf-badge
*,acf-badge
*::before,acf-badge
*::after{box-sizing:border-box;margin:0;padding:0}acf-badge,acf-badge
*{display:none}acf-badge[data-visually-hidden],acf-badge
*[data-visually-hidden]{block-size:1px;inline-size:1px;margin:unset;padding:unset;border:0;clip:rect(0 0 0
0);clip-path:inset(50%);overflow:clip;position:absolute;white-space:nowrap}acf-badge>*{min-inline-size:0;fl
ex-shrink:0;flex-grow:0}acf-badge

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span{flex-shrink:1;white-space:nowrap;text-overflow:ellipsis;overflow:clip;max-block-size:calc(1*1lh)}acf-b
adge[data-fill="Tint"]{background-color:var(--smtc-status-informative-tint-background)}.acf-badge__favicon
{border-radius:var(--mai-smtc-corner-favicon)}@media(forced-colors:active){acf-badge{border:1px
solid}}acf-badge[data-size="AdSlugSize"]{border:1px solid
var(--bing-ads-smtc-ad-slug-stroke);border-radius:var(--bing-ads-smtc-ad-slug-corner);margin-inline-end:var(
--smtc-gap-between-content-xxx-small);padding-inline:var(--smtc-padding-ctrl-text-side)}acf-badge[data-size
="AdSlugSize"][data-weight="Default"]{font:var(--bing-smtc-text-global-caption2);line-height:var(--bing-ads
-smtc-ad-slug-line-height)}acf-badge[data-size="AdSlugSize"][data-weight="Heavy"]{font:var(--bing-smtc-te
xt-global-caption2-strong);line-height:var(--bing-ads-smtc-ad-slug-line-height)}acf-badge[data-style="AdSlug
"]{color:var(--bing-ads-smtc-desktop-foreground-ad-slug-default)}acf-badge[data-style="AdSlug"][data-fill="
AdSlugWhite"]{background-color:var(--smtc-background-web-page-primary)}acf-badge[data-style="AdSlug
"][data-fill="AdSlugTransparent"]{background-color:transparent}.b_adChoice{position:relative;width:12px;h
eight:12px;text-indent:0;overflow:hidden;direction:ltr;transform:none;float:right}.b_adChoiceInline{display:i
nline-block}.b_adChoice::after{transform-origin:-320px
0;transform:scale(.5);position:relative;display:inline-block}.b_adSlugRow
.b_adChoice{float:none;vertical-align:-1px;display:inline-block}.pa_sbo+a
.b_adChoice{margin-top:8px}.b_adPATitleBlock bubble_lite bubble_item,.b_adSlugRow bubble_lite
bubble_item,.b_spa_adblock bubble_lite bubble_item,.b_magazine bubble_lite
bubble_item,.ra_car_container bubble_lite
bubble_item,.b_adinfo{display:inline-block!important}.b_adinfo{cursor:pointer;vertical-align:middle;line-hei
ght:0}@media(forced-colors:active){.b_adChoice{filter:invert(1)}.b_adChoice::after{content:url(/rp/EX_mg
ILPdYtFnI-37m1pZn5YKII.png)}.emb_ppa .listad{position:relative}.emb_ppa .b_adinfo
bubble_item{height:12px}.emb_ppa lcard .lc_content .b_factrow
.b_slgw{position:absolute;top:6px;left:8px;display:flex;align-items:center;border:1px solid
#ecec;border-radius:6px;background-color:#fff;justify-content:center;height:20px;width:71px}div.b_adSlug
,lcard .lc_content .b_factrow div.b_embPPASlug.b_adSlug,#lMapContainer .b_aswta .vertcard .lc_content
div.b_factrow div.b_adSlug,div.gs_VA_slgw .b_adSlug.b_opttxt.b_divdef,.genserp_PA_container
.genserp_PA_title div.genserp_PA_adslug
span.genserp_adSlug,.gs_embedded_label_container,.embedded_msan_ad_slug{border:0;margin-right:0}.b_a
cf_crs1 .slide.b_crs1itm>*:last-child,.b_acf_crs1 .b_slideexp,#b_topw .b_wpt_container
.b_slidesContainer:has(.b_acf_crs1) .b_slidesContainer{margin-bottom:unset}#b_topw
.b_wpt_container:has(.b_acf_crs1) .b_viewport{padding:unset}#b_topw .b_wpt_container
.b_wpt_bl:has(.b_acf_crs1){overflow:visible}.b_acf_crs1 .b_slidesContainer
.slide.b_crs1itm{overflow:unset}.b_acf_crs1 .btn.next .bg,.b_acf_crs1 .btn.prev
.bg{background:unset}.b_acf_crs1.hovexp .b_viewport,.b_acf_crs1.hovexp .b_slidebar,#b_pole #tob_container
.b_acf_crs1.hovexp .b_viewport{height:unset!important}#b_topw .b_wpt_container .b_acf_crs1
.btn.bld.next,#b_topw .b_wpt_container .b_acf_crs1 .btn.bld.prev,.b_acf_crs1 .btn.next,.b_acf_crs1
.btn.prev{z-index:5}.b_acf_crs1.b_fadebg .btn.next
.bg{background:linear-gradient(90deg,var(--bing-smtc-background-ctrl-fade-on-primary-stop-0)
0%,var(--smtc-background-card-on-primary-default-rest) 60%)}.b_acf_crs1.b_fadebg .btn.prev
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```
.bg{background:linear-gradient(270deg,var(--bing-smtc-background-ctrl-fade-on-primary-stop-0)
0%,var(--smtc-background-card-on-primary-default-rest) 60%)} .b_acf_crsl.b_fadebg.b_fadebg_theme
.btn.next .bg{background:linear-gradient(90deg,var(--bing-smtc-ctrl-background-fade-stop-0)
0,var(--bing-smtc-background-card-on-primary-alt-rest) 20px)} .b_acf_crsl.b_fadebg.b_fadebg_theme
.btn.prev .bg{background:linear-gradient(270deg,var(--bing-smtc-ctrl-background-fade-stop-0)
0,var(--bing-smtc-background-card-on-primary-alt-rest) 20px)} .b_dark .b_acf_crsl .b_sidebar
.slide{background-color:unset}[dir="rtl"] .b_acf_crsl.b_fadebg .btn.next
.bg{background:linear-gradient(270deg,var(--bing-smtc-background-ctrl-fade-on-primary-stop-0)
0%,var(--smtc-background-card-on-primary-default-rest) 60%)}[dir="rtl"] .b_acf_crsl.b_fadebg .btn.prev
.bg{background:linear-gradient(90deg,var(--bing-smtc-background-ctrl-fade-on-primary-stop-0)
0%,var(--smtc-background-card-on-primary-default-rest) 60%)}[dir="rtl"]
.b_acf_crsl.b_fadebg.b_fadebg_theme .btn.next
.bg{background:linear-gradient(270deg,var(--bing-smtc-ctrl-background-fade-stop-0)
0,var(--bing-smtc-background-card-on-primary-alt-rest) 20px)}[dir="rtl"]
.b_acf_crsl.b_fadebg.b_fadebg_theme .btn.prev
.bg{background:linear-gradient(90deg,var(--bing-smtc-ctrl-background-fade-stop-0)
0,var(--bing-smtc-background-card-on-primary-alt-rest) 20px)} .b_acf_crsl.hovexp .leftmost .b_overlay
.b_viewport,.b_acf_crsl.hovexp .leftrightmost .b_overlay .b_viewport,.b_acf_crsl.hovexp .b_overlay
.b_viewport{padding-left:var(--smtc-gap-between-content-x-large)!important;margin-left:calc(var(--smtc-gap-
between-content-x-large)*-1)!important} .b_acf_crsl.hovexp .middle .b_overlay
.b_viewport,.b_acf_crsl.hovexp .rightmost .b_overlay
.b_viewport{padding-left:unset!important;margin-left:unset!important} .b_colg_4xs
.slide{margin-inline-end:var(--smtc-padding-ctrl-text-side)!important} .b_rowg_4xs
.slide>{*margin-bottom:var(--smtc-padding-ctrl-text-side)!important} .b_colg_3xs
.slide{margin-inline-end:var(--smtc-padding-ctrl-sm-text-top)!important} .b_rowg_3xs
.slide>{*margin-bottom:var(--smtc-padding-ctrl-sm-text-top)!important} .b_colg_2xs
.slide{margin-inline-end:var(--smtc-gap-between-content-xx-small)!important} .b_rowg_2xs
.slide>{*margin-bottom:var(--smtc-gap-between-content-xx-small)!important} .b_colg_xs
.slide{margin-inline-end:var(--smtc-gap-between-content-x-small)!important} .b_rowg_xs
.slide>{*margin-bottom:var(--smtc-gap-between-content-x-small)!important} .b_colg_s
.slide{margin-inline-end:var(--smtc-gap-between-content-small)!important} .b_rowg_s
.slide>{*margin-bottom:var(--smtc-gap-between-content-small)!important} .b_colg_m
.slide{margin-inline-end:var(--smtc-gap-between-content-medium)!important} .b_rowg_m
.slide>{*margin-bottom:var(--smtc-gap-between-content-medium)!important} .b_colg_l
.slide{margin-inline-end:var(--mai-smtc-padding-card-default)!important} .b_rowg_l
.slide>{*margin-bottom:var(--mai-smtc-padding-card-default)!important} .b_colg_xl
.slide{margin-inline-end:var(--smtc-gap-between-content-x-large)!important} .b_rowg_xl
.slide>{*margin-bottom:var(--smtc-gap-between-content-x-large)!important} .b_colg_2xl
.slide{margin-inline-end:var(--smtc-gap-between-content-xx-large)!important} .b_rowg_2xl
.slide>{*margin-bottom:var(--smtc-gap-between-content-xx-large)!important} .b_colg_3xl
```

```
.slide{margin-inline-end:var(--smtc-padding-content-xx-large)!important}.b_rowg_3xl
.slide>{*margin-bottom:var(--smtc-padding-content-xx-large)!important}.b_colg_4xl
.slide{margin-inline-end:var(--smtc-padding-content-xxx-large)!important}.b_rowg_4xl
.slide>{*margin-bottom:var(--smtc-padding-content-xxx-large)!important}.b_acf_crsl
.b_acf_card:focus-visible,.b_acf_crsl .b_acf_card.b_acf_kbd_focus{outline:2px solid
var(--smtc-ctrl-focus-outer-stroke);outline-offset:-3px;border-radius:var(--mai-smtc-corner-card-default);z-ind
ex:1}.b_acf_card{box-sizing:border-box;border-radius:var(--mai-smtc-corner-card-default);-webkit-user-selec
t:none;user-select:none;position:relative;width:100%;height:100%;position:relative}.b_acf_card.b_acf_bckgn
d{background:var(--bing-smtc-background-card-on-primary-alt-rest)}.b_acf_card_link{border-radius:var(--m
ai-smtc-corner-card-default);outline-offset:-1px;position:absolute;width:100%;height:100%}.b_acf_card_link:
hover{text-decoration:unset}.acf_col1_4{width:140px}.acf_col1_6{width:160px}@media(forced-colors:activ
e){.b_acf_card_link{background-color:unset}.b_acf_card
.acf_t_c_title{color:LinkText!important}.acf_col1{width:88px}.acf_col2{width:200px}.acf_col3{width:312
px}.acf_col4{width:424px}.acf_col5{width:536px}.acf_col6{width:648px}.acf_col7{width:760px}.acf_col8
{width:872px}.acf_col9{width:984px}.acf_col10{width:1096px}.acf_col11{width:1208px}.acf_col12{width:
1320px}.acf_row1{height:88px}.acf_row2{height:200px}.acf_row3{height:312px}.acf_row4{height:424px}.
acf_row5{height:536px}.acf_row6{height:648px}.acf_row7{height:760px}.acf_row8{height:872px}.acf_row
9{height:984px}.acf_row10{height:1096px}.acf_row11{height:1208px}.acf_row12{height:1320px}.b_overla
y
.btn{height:100%;position:absolute;width:20px;cursor:pointer;z-index:1;-moz-user-select:none;-khtml-user-se
lect:none;-webkit-user-select:none;-o-user-select:none;-ms-user-select:none;user-select:none}.b_overlay .btn
*{transition:opacity .3s linear}.b_overlay .btn
.bg{position:absolute;width:100%;height:100%;background-color:#444;opacity:.3;filter:alpha(opacity=30)}.b
_overlay .btn.nobg .bg{background-color:transparent}.b_overlay .btn:hover
.bg{opacity:.7;filter:alpha(opacity=70)}.b_overlay .btn.nohover:hover
.bg{opacity:.3;filter:alpha(opacity=30)}.b_overlay .btn.disabled .bg,.b_overlay .btn.nohover.disabled
.bg{opacity:.01;filter:alpha(opacity=1)}.b_overlay .btn.hidden .bg,.b_overlay .btn.nohover.hidden
.bg{opacity:.01;filter:alpha(opacity=1)}.b_overlay .btn.disabled,.b_overlay
.btn.hidden{cursor:default}.b_overlay .btn .cr{text-align:center;line-height:0}.b_overlay
.btn.bld.polecarchev.hidden .cr,.b_overlay .btn.bld.polecarchev.disabled .cr,.b_overlay
.btn.bld.rounded.hidden .cr,.b_overlay .btn.bld.rounded.disabled .cr,.b_overlay .btn.bld.bigrounded.hidden
.cr,.b_overlay .btn.bld.bigrounded.disabled .cr{opacity:.01;visibility:unset}.b_overlay .btn.hidden
.cr,.b_overlay .btn.disabled .cr{visibility:hidden}.b_overlay .btn.prev.ltr .cr,.b_overlay .btn.next.rtl
.cr{transform:scaleX(-1)}.b_overlay .btn.next{right:0}.b_overlay .btn .cr>div{background-size:40px
200px;background-repeat:no-repeat;width:20px;height:40px;background-position:-10px 0}.b_overlay .btn
.cr>div{background-image:url(/rp/S9IIHAMBBy7JxaR5m1KRvMwDswyw.png)}.b_overlay
.acfdefaultchev.btn.next{right:0!important}.b_overlay .acfdefaultchev.btn.prev{left:0!important}.b_overlay
.acfdefaultchev.btn:hover .bg{opacity:unset;filter:unset}.b_overlay .acfdefaultchev.btn.disabled,.b_overlay
.acfdefaultchev.btn.hidden{display:none}.b_overlay .acfdefaultchev.btn{width:48px}.b_overlay
.acfdefaultchev.btn .bg{opacity:unset}.b_overlay .acfdefaultchev.btn.prev .cr{left:0}.b_overlay
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.acfdefaultchev.btn.next .cr{right:0}.acfdefaultchev
.cr{display:flex;justify-content:center;align-items:center;flex:1 0
0;align-self:stretch;width:36px;height:48px;position:absolute;margin:unset;opacity:unset;transition:unset;border-radius:var(--smtc-corner-ctrl-lg-rest);background:var(--bing-smtc-background-container);box-shadow:var(--smtc-shadows-floating-action-button-rest);fill:var(--smtc-foreground-content-neutral-secondary)}.acfdefaultchev
.cr:active{background:var(--smtc-ctrl-fab-background-pressed)}.b_ofchev .acfdefaultchev.btn.prev
.cr{left:-18px}.b_ofchev .acfdefaultchev.btn.next
.cr{right:-18px}@media(forced-colors:active){.acfdefaultchev .cr{background:ButtonFace}.acfdefaultchev
.cr>svg{fill:ButtonText}.acfdefaultchev .cr:active,.acfdefaultchev
.cr:has(:focus-visible){background:Highlight}}.b_nochevshadow .acfdefaultchev .cr,.b_nochevshadow
.acfdefaultchev .cr:active,.b_nochevshadow .acfdefaultchev .cr:active,.b_nochevshadow .acfdefaultchev
.cr:focus{background:none!important;box-shadow:none!important}.b_overlay
.btn.bld.prev{left:-20px}.b_overlay
.btn.bld.next{right:-20px}.slide.b_crslitm.b_sldfitcont{width:fit-content}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_title,#b_content .pa_carousel_mlo .pa_item.pa_vCard .pa_caption,#b_content
.pa_carousel_mlo .pa_item.pa_vCard .b_finalText,#b_content .pa_carousel .pa_item.pa_vCard
.pa_title,#b_content .pa_carousel .pa_item.pa_vCard .pa_caption,#b_content .pa_carousel .pa_item.pa_vCard
.b_finalText,#b_content .pa_grid .pa_item.pa_vCard .pa_title,#b_content .pa_grid .pa_item.pa_vCard
.pa_caption,#b_content .pa_grid .pa_item.pa_vCard .b_finalText{padding:0
var(--smtc-padding-ctrl-horizontal-default)}#b_content .pa_carousel_mlo .pa_item.pa_vCard .cico,#b_content
.pa_carousel .pa_item.pa_vCard .cico,#b_content .pa_grid .pa_item.pa_vCard
.cico{margin-bottom:var(--smtc-gap-between-content-small)}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_title,#b_content .pa_carousel .pa_item.pa_vCard .pa_title,#b_content .pa_grid
.pa_item.pa_vCard
.pa_title{font:var(--bing-smtc-text-global-body3);color:var(--smtc-ctrl-link-foreground-brand-rest)}#b_content
.pa_carousel_mlo .pa_item.pa_vCard .pa_caption,#b_content .pa_carousel .pa_item.pa_vCard
.pa_caption,#b_content .pa_grid .pa_item.pa_vCard
.pa_caption{margin-top:var(--smtc-gap-between-content-x-small);padding-bottom:var(--smtc-gap-between-content-x-small);font:var(--bing-smtc-text-global-caption1)!important}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_caption .pa_price,#b_content .pa_carousel .pa_item.pa_vCard .pa_caption
.pa_price,#b_content .pa_grid .pa_item.pa_vCard .pa_caption
.pa_price{margin-bottom:var(--smtc-gap-between-content-xx-small)}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_caption .pa_price .prc_clr_grn,#b_content .pa_carousel .pa_item.pa_vCard .pa_caption
.pa_price .prc_clr_grn,#b_content .pa_grid .pa_item.pa_vCard .pa_caption .pa_price
.prc_clr_grn{color:var(--smtc-status-success-tint-foreground)}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_caption .pa_price strong,#b_content .pa_carousel .pa_item.pa_vCard .pa_caption
.pa_price strong,#b_content .pa_grid .pa_item.pa_vCard .pa_caption .pa_price
strong{color:var(--smtc-foreground-content-neutral-primary)}#b_content .pa_carousel_mlo
.pa_item.pa_vCard .pa_caption .pa_price .original_price,#b_content .pa_carousel .pa_item.pa_vCard
```

Protection Types of Relay Protection Devices

.pa_caption .pa_price .original_price,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .pa_price .original_price{font:var(--bing-smtc-text-global-caption1);padding-left:var(--smtc-gap-between-content-x-small)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .pa_installmentDesc,#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .pa_unitprice,#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .vertical_converted_price,#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .pa_shippingcost,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .pa_installmentDesc,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .pa_unitprice,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .vertical_converted_price,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .pa_shippingcost,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .pa_installmentDesc,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .pa_unitprice,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .vertical_converted_price,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .pa_shippingcost{font:var(--bing-smtc-text-global-caption1);margin-bottom:var(--smtc-gap-between-content-xx-small);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_attribution,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_attribution,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_attribution{margin-bottom:var(--smtc-gap-between-content-xx-small);color:var(--bing-smtc-foreground-content-neutral-secondary-alt);border-bottom:0;font:var(--bing-smtc-text-global-caption1)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_attribution cite,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_attribution cite,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_attribution cite{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt);opacity:unset}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_secondaryText,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_secondaryText,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_secondaryText{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rebateText,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rebateText,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rebateText{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_promo a,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_promo a,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_promo a{color:var(--smtc-ctrl-link-foreground-brand-rest)}#b_context .pa_carousel_mlo .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rating a,#b_context .pa_carousel .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rating a,#b_context .pa_grid .pa_item.pa_vCard .pa_caption .b_secondaryText .pa_rating a{color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}#b_context .pa_carousel_mlo .slide,#b_context .pa_carousel .slide,#b_context .pa_grid .pa_item{border-radius:var(--mai-smtc-corner-card-default)!important;overflow:hidden}#b_pole .pa_carousel_mlo{margin-right:0}#b_content .pa_carousel_mlo .pa_item.pa_vCard,#b_content .pa_carousel .pa_item.pa_vCard{margin-bottom:0!important}#b_content .pa_carousel_mlo .pa_carousel

Protection Types of Relay Protection Devices

```
.slide{margin:var(--smtc-gap-between-content-xx-small) 0}#b_content .pa_carousel_mlo
.pa_carousel{margin:calc(-1*var(--smtc-gap-between-content-xx-small)) 0}#b_content .pa_carousel
.slide{margin:calc(var(--smtc-gap-between-content-xx-small) - var(--smtc-gap-between-content-xxx-small))
0}#b_results .pa_carousel_mlo .pa_carousel .b_slidebar .slide:first-child,#b_topw .pa_carousel_mlo
.pa_carousel .b_slidebar
.slide:first-child{margin-left:var(--smtc-gap-between-content-xxx-small)}.pa_item.pa_vCard{word-wrap:brea
k-word;line-height:20px;overflow:hidden}.pa_item.pa_vCard p strong,.pa_item.pa_vCard .pa_price
strong{color:#111}.pa_item.pa_vCard .pa_deal{text-decoration:line-through}#b_content .pa_item.pa_vCard
.b_attribution{font-size:14px;padding-bottom:0;line-height:20px}#b_context .pa_item.pa_vCard
p,#b_rrat_cont .pa_item.pa_vCard p{line-height:20px}#b_content .pa_item.pa_vCard
.pa_title{line-height:20px;overflow:hidden}.pa_item.pa_vCard
.b_footnote{line-height:17px;padding-bottom:0}.pa_item.pa_vCard
.pa_caption{padding-bottom:8px}.pa_item.pa_vCard .pa_caption,.pa_item.pa_vCard
.pa_title{padding-left:4px;padding-right:4px}.pa_item.pa_vCard
.b_finalText{position:absolute;width:100%;box-sizing:border-box;left:0;padding:0 4px 0
4px;bottom:8px}.pa_item.pa_vCard
.cico{display:block;padding-bottom:0;margin-bottom:8px;margin-left:auto;margin-right:auto;border-radius:0}
.pa_item.pa_vCard .pa_img{position:relative}.pa_item.pa_vCard .pa_price:hover,.pa_item.pa_vCard
.b_attribution:hover,.pa_item.pa_vCard .b_footnote:hover{cursor:pointer}.pa_carousel .slide{box-shadow:0 0
0 1px rgba(0,0,0,.1)!important}.pa_carousel .slide.see_more{box-shadow:0 0 0 0
rgba(0,0,0,0)!important}.pa_caption .pa_price:hover strong,.pa_hover .pa_hover_content .pa_price:hover
strong{text-decoration:underline;text-decoration-color:#111}.pa_caption .b_attribution:hover,.pa_hover
.pa_hover_content
.b_attribution:hover{text-decoration:underline}.pa_caption>.b_secondaryText:hover,.pa_hover
.pa_hover_content>.b_secondaryText:hover{color:#444}.b_ads1line{white-space:nowrap;overflow:hidden;te
xt-overflow:ellipsis;display:block}.pa_item .b_attribution cite,#b_context .pa_item .b_attribution
cite,.pa_hover .b_attribution cite,.pa_item .b_footnote .pa_url cite,.pa_item .b_attribution cite,#b_rrat_cont
.pa_item .b_attribution cite,.pa_hover .b_attribution cite,.pa_item .b_footnote .pa_url
cite{color:#111;opacity:.8}#bpage.b_drk .pa_item .b_footnote .pa_url
cite{color:#d2d0ce}.pa_item.pa_vCard{cursor:pointer}@supports(-webkit-line-clamp:2){.b_adsTrunTx{displ
ay:-webkit-box;overflow:hidden;-webkit-box-orient:vertical;white-space:normal;visibility:visible}.b_ellipsis{
display:none}.b_adsTrunTx
.b_hiddenTx{display:inline}}.b_hiddenTx{display:none}.pa_hover{background-color:var(--smtc-background
-web-page-primary);box-shadow:none;position:absolute;opacity:0;visibility:hidden;word-wrap:break-word;cu
rsor:pointer;overflow:hidden;z-index:4;pointer-events:none}.pa_hover
.pa_hover_content{padding-bottom:var(--smtc-gap-between-content-x-small)}.pa_hover
.pa_hover_title,.pa_hover .pa_price,.pa_hover .b_attribution,.pa_hover .b_secondaryText,.pa_hover
.pa_additionTx,.pa_hover>div>.b_ads1line,.pa_hover .b_footnote,.pa_hover
.pa_hover_content>.pa_locInv{padding-left:var(--smtc-padding-ctrl-horizontal-default);padding-right:var(--s
mtc-padding-ctrl-horizontal-default)}.pa_hover .pa_hover_img{position:relative}.pa_hover .pa_hover_img
```

```

img{display:block;margin-left:auto;margin-right:auto}.pa_hover
.pa_hover_title{font:var(--bing-smtc-text-global-body3)!important;color:var(--smtc-ctrl-link-foreground-brand-rest);margin-bottom:var(--smtc-gap-between-content-x-small)}.pa_hover
.pa_hover_title:hover{text-decoration:underline}.pa_hover
.pa_price{margin-bottom:var(--smtc-gap-between-content-xx-small)}.pa_hover.pa_price
.prc_clr_grn{color:var(--smtc-status-success-tint-foreground)}.pa_hover.pa_price
strong{color:var(--smtc-foreground-content-neutral-primary);font:var(--bing-smtc-text-global-caption1-strong)}.pa_hover.pa_price
.original_price{font:var(--bing-smtc-text-global-caption1);padding-left:var(--smtc-gap-between-content-x-small)}.pa_hover.pa_installmentDesc,.pa_hover.pa_unitprice,.pa_hover.vertical_converted_price,.pa_hover
.pa_shippingcost{font:var(--bing-smtc-text-global-caption1);margin-bottom:var(--smtc-gap-between-content-xx-small);color:var(--bing-smtc-foreground-content-neutral-secondary-alt);padding-bottom:0}.pa_hover
.b_attribution{margin-bottom:var(--smtc-gap-between-content-xx-small);color:var(--bing-smtc-foreground-content-neutral-secondary-alt);border-bottom:0;font:var(--bing-smtc-text-global-caption1)}.pa_hover
.b_attribution
cite{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt);opacity:unset}.pa_hover.pa_bcSeparator{margin:var(--smtc-gap-between-content-xx-small)0;border-top:1px solid #ecec}.pa_hover
.b_secondaryText{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}.pa_hover.b_secondaryText
.pa_rebateText{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}.pa_hover.b_secondaryText.pa_promo
a{color:var(--smtc-ctrl-link-foreground-brand-rest)}.pa_hover.b_secondaryText.pa_rating
a{color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}.pa_hover.b_secondaryText
.b_colorBlend{color:var(--bing-smtc-foreground-content-neutral-secondary-alt)!important}.pa_hover
.pa_additionTx,.pa_hover
.pa_locInv{font:var(--bing-smtc-text-global-caption1);color:var(--bing-smtc-foreground-content-neutral-secondary-alt)}a.pa_hover_adLink:hover{text-decoration:none}.pa_hover:has(.pa_hover_content.pa_hcgp){border-radius:var(--mai-smtc-corner-card-default)}.pa_hover.ad_scpah.pa_animation{background-color:var(--smtc-background-card-on-primary-default-hover);box-shadow:var(--bing-smtc-shadows-card-hover-3);pointer-events:auto}.pa_item.pa_vCard>a:hover{text-decoration:none}.pa_hover:not(:has(.b_pa_hov_indicator_c))
.pa_hover_img
img{margin-bottom:var(--smtc-gap-between-content-small)}.pa_hover.ad_scpah.pa_animation{transition:height var(--smtc-duration-medium-01) var(--bing-smtc-animation-ease-default),background-color var(--smtc-duration-medium-01) var(--bing-smtc-animation-ease-default),box-shadow var(--smtc-duration-medium-01) var(--bing-smtc-animation-ease-default)}.b_acf_crsl .carousel_seemore .rtl
.b_seemore_chev svg{transform:scaleX(-1)}.b_acf_crsl
.carousel_seemore{display:flex;align-items:center;justify-content:center;width:64px}.b_acf_crsl
.carousel_seemore .b_moreLink{display:flex;padding:var(--bing-smtc-padding-ctrl-icon-only-text-top)var(--bing-smtc-padding-ctrl-text-side-large)var(--bing-smtc-padding-ctrl-icon-only-text-bottom)

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Protection Types of Relay Protection Devices

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var(--bing-smtc-padding-ctrl-text-side-large);flex-direction:column;align-items:center;gap:var(--smtc-gap-inside-ctrl-to-secondary-icon);text-decoration:none}.b_acf_crsl .carousel_seemore .b_moreLink
.b_seemore_chev{display:flex;width:40px;height:40px;justify-content:center;align-items:center}.b_acf_crsl
.carousel_seemore .b_moreLink .b_seemore_chev
svg{fill:var(--smtc-foreground-ctrl-on-transparent-rest);font-weight:bold;transition:transform
var(--smtc-duration-medium-01) var(--bing-smtc-animation-ease-default)}.b_acf_crsl .carousel_seemore
.b_moreLink
.b_call_txt{color:var(--smtc-foreground-ctrl-on-transparent-rest);font:var(--bing-smtc-text-global-caption1-strong)}.b_acf_crsl .carousel_seemore .b_moreLink:hover
.b_seemore_chev{border-radius:var(--smtc-corner-ctrl-hover);background:var(--bing-smtc-background-ctrl-ghost-hover)}.b_acf_crsl .carousel_seemore .b_moreLink:hover .b_seemore_chev
svg{width:20px;height:20px}.b_acf_crsl .carousel_seemore .b_moreLink:active
.b_seemore_chev{border-radius:var(--smtc-corner-ctrl-pressed);background:var(--bing-smtc-background-ctrl-ghost-pressed)}.b_acf_crsl .carousel_seemore .b_moreLink:active .b_seemore_chev
svg{width:12px;height:12px}#slideexp0_1E59ED .slide:last-child { margin-inline-end: 0; }
#slideexp0_1E59ED .slide>*:last-child { margin-bottom: unset !important; } .b_acf_crsl
#slideexp0_1E59EDc .b_slidebar .slide { box-shadow: unset; -webkit-box-shadow: unset; }
.b_acf_crsl.hovexp #slideexp0_1E59EDc.b_slideexp .b_overlay .b_slidesContainer { overflow: visible !important; } .b_acf_crsl.hovexp #slideexp0_1E59EDc.b_slideexp .b_overlay .b_viewport, .b_acf_crsl.hovexp #slideexp0_1E59EDc.b_slideexp .b_viewport { padding-top: 12px !important; margin-top: -12px !important; padding-bottom: 12px !important; margin-bottom: -12px !important; } .b_acf_crsl.hovexp #slideexp0_1E59EDc.b_slideexp .b_overlay .b_viewport { padding-bottom: 24px !important; margin-bottom: -24px !important; }SponsoredSee Protection Types of Relay Protection DevicesFunctional Devices | RIBXLSV | ...Enclosed 10Amp Spst 10-30Vac/Dc Relay With Override Switch AND Internal AC Sensor Analog Output | Power Monitoring And Protection - Current Switches$119.08Functional Devices | RIBXLSV | Enclosed ...10Amp Spst 10-30Vac/Dc Relay With Override Switch AND Internal AC Sensor Analog Output | Power Monitoring And Protection - Current Switches

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An overcurrent relay is a type of protective relay which operates when the load current exceeds a pickup value. It is of two types: instantaneous over current (IOC) relay and definite time overcurrent (DTOC) ...

Protective relays work in conjunction with various electrical protection and control devices, such as Miniature Circuit Breakers (MCBs) and Molded Case Circuit Breakers (MCCBs), to ...

This article covers various types of protective relays, such as overcurrent, directional, and differential relays, highlighting their operating characteristics and applications in electrical systems.

A protective relay is a device that detects the fault and initiates the operation of the circuit breaker to isolate the defective element from the rest of the system.

Protection Types of Relay Protection Devices

This blog will explore the various types of protective relays and their benefits in detecting faults such as overcurrent, overvoltage, short circuits, and ground faults.

Learn about protective relays, their working principle, types, and applications in power systems. Discover how relays protect transformers, generators, and transmission lines from faults.

In this guide, we'll explore what protection relays are, how they're classified, the types available, and how they work with instrument transformers to create secure zones of protection.

Types of protection relays are mainly based on their characteristic, logic, on actuating parameter and operation mechanism. Protective relays can be categorized based on their operating ...

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