

Working principle of photovoltaic panel inverter

In this article we discuss how inverters work, including string, or single-phase, and central, 3-phase inverters; explore major inverter functions, key components, designs, controls, protections and com ...

An inverter is one of the most important pieces of equipment in a solar energy system. It's a device that converts direct current (DC) electricity, which is what a solar panel generates, to alternating current ...

When they do, a string of solar panels forms a circuit where DC energy flows from each panel into a wiring harness that connects them all to a single inverter. The inverter changes the DC energy into ...

How They Work: Each solar panel connects to its own small inverter (typically 250-400W capacity), converting DC to AC right at the panel level. The AC outputs combine in parallel before ...

A solar inverter is an integral component of the solar energy system. It gets hold of direct current (DC) energy and converts it to alternating current electricity (AC).

The working principle of a solar inverter can be summarized in the following steps: DC to AC Conversion: The solar inverter converts the DC electricity produced by the solar panels into AC ...

Inverters convert direct current (DC) energy which is generated from the solar panels into usable alternating current (AC) energy. After the panels themselves, inverters are the most important ...

These inverters use the pulse-width modification method: switching currents at high frequency, and for variable periods of time. For example, very narrow (short) pulses simulate a low voltage situation, ...

A photovoltaic inverter (PV Inverter), also known as a solar inverter, is a power electronic device. Its core function is to convert the direct current (DC) generated by solar panels into ...

To transform direct current into alternating current, the solar inverter has a series of electronic mechanisms that convert a linear or direct current into a sinusoidal or alternating current.

String InverterCentral InvertersMicroinvertersBattery Based InverterHybrid InverterAdvantages of Solar InverterDisadvantages of Solar InverterThis kind of solar panel is arranged in the form of a string and many strings are allied to a single string inverter. Every string holds the DC power where it is altered into AC power used like electricity. Based on the installation size, you may have many string inverters where each string gets DC power from some strings. Thes...See more on elprocus #b_results .b_vidAns{border-radius:6px;box-shadow:0 0 0 1px rgba(0,0,0,.05);padding:16px

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20px;gap:10px;background:#fff}@charset "UTF-8";#b_results
.b_ans.b_vidAns{box-shadow:none!important;padding:var(--smtc-gap-between-content-medium)
0!important;background:var(--bing-smtc-background-ctrl-fade-on-image-stop-0)}#b_results #serpvidans.vsacf
.mc_vtvc,#b_results #serpvidans.vsacf .mc_vtvc_th,#b_results #serpvidans.vsacf .cico,#b_results
#serpvidans.vsacf .mc_vtvc_htb,#b_results #serpvidans.vsacf .vrhc,#b_results #serpvidans.vsacf
.vrhcp,#b_results #serpvidans.vsacf .vrhtc,#b_results #serpvidans.vsacf
.vrhtpc{border-radius:var(--mai-smtc-corner-list-card-default)}#b_results #serpvidans.vsacf .mmlist
.mc_vtvc,#b_results #serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta{margin:0}#b_results
#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_channel,#b_results #serpvidans.vsacf
.mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_row_channel{color:var(--smtc-foreground-content-neutral-primary)}#serpvidans.vsacf,#serpvidans.vsacf
.expctn .expbody,#serpvidans.vsacf
.mmlist{display:flex;flex-direction:column;gap:var(--smtc-gap-between-content-medium)}#serpvidans.vsacf
.cico{height:auto}#serpvidans.vsacf .mc_vtvc_ban_lo{top:0;right:auto}#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta{height:auto;padding:var(--smtc-gap-between-content-xx-small) 0
var(--smtc-gap-between-content-xx-small)
var(--smtc-gap-between-content-medium);display:flex;flex-direction:column;justify-content:space-between}#
serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_title,#serpvidans.vsacf .mmlist .mc_vtvc
.mc_vtvc_meta
.mc_vtvc_title{color:var(--smtc-ctrl-link-foreground-brand-rest);font:var(--bing-smtc-text-global-body2);height:auto;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#serpvidans.vsacf .mc_cwvc
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block{display:flex;flex-direction:column;gap:var(--smtc-padding-ctrl-text-side)}#serpvidans.
vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf
.mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block_area .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row,#serpvidans.vsacf .mmlist
.mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block
.mc_vtvc_meta_row{color:var(--smtc-foreground-content-neutral-primary);height:var(--mai-smtc-padding-card-default);font:var(--bing-smtc-text-global-caption1)}#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf
.mc_cwvc .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before,#serpvidans.vsacf
.mmlist .mc_vtvc .mc_vtvc_meta .mc_vtvc_meta_block .mc_vtvc_meta_row
.mc_vtvc_meta_row_channel::before{content:" . "}"#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta

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.mc_vtvc_meta_block_area .mc_vtvc_meta_pubdate,#serpvidans.vsacf .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block
.mc_vtvc_meta_pubdate{color:var(--bing-smtc-foreground-content-neutral-tertiary);padding-bottom:0}.vsacf
.mc_cwvc .mc_vtvc_con_rc,.vsacf .mmlist .mc_vtvc_con_rc{display:flex}.vsacf .mc_cwvc .mc_vtvc_con_rc
.mc_vtvc_meta_w,.vsacf .mmlist .mc_vtvc_con_rc .mc_vtvc_meta_w{height:auto}.vsacf
.b_title{padding-left:var(--mai-smtc-padding-card-default)}.vsacf .b_title
.mmtitle{font:var(--bing-smtc-text-global-subtitle1-strong);margin-bottom:0}.vsacf .b_title .mmtitle
a::after{content:"";margin:5px 5px 0 0;border-top:2px solid
var(--smtc-foreground-content-neutral-primary);border-right:2px solid
var(--smtc-foreground-content-neutral-primary);background-size:7px
7px;width:7px;height:7px;transform:rotate(45deg);display:inline-block;margin-left:4px}#serpvidans.vsacf
.b_title .mmtitle{margin-bottom:0}#serpvidans.vsacf .b_title .mmtitle
a{color:var(--smtc-foreground-content-neutral-primary)}#serpvidans.vsacf
.mc_cwvc{width:100%;margin-bottom:var(--smtc-gap-between-content-x-small)}#serpvidans.vsacf
.mc_cwvc .mc_vtvc{box-shadow:none}#serpvidans.vsacf .mc_cwvc .mc_vtvc
.mc_vtvc_meta{height:100%;padding:var(--smtc-gap-between-content-x-small) 0
var(--smtc-gap-between-content-x-small)
var(--mai-smtc-padding-card-default);background:var(--bing-smtc-background-ctrl-fade-on-image-stop-0)}#s
erpvidans.vsacf .mc_cwvc .mc_vtvc .mc_vtvc_meta
.mc_vtvc_title{font:var(--bing-smtc-text-global-body1)}#serpvidans.vsacf .cardless.mmlist
.mc_vtvc_con_rc,#serpvidans.vsacf .cardless.mmlist .mc_vtvc_th{height:auto}#serpvidans.vsacf
.vsb_tr_c.va_tt{margin:0}#serpvidans.vsacf .vtbc .mv_vtvc_play,#serpvidans.vsacf .vtbc
.mv_vtvc_play_ext{position:static}#serpvidans.vsacf .va_tt
.mc_vtvc_ban_lo{display:block}#serpvidans.vsacf
.mc_bc{width:auto;border-radius:var(--smtc-ctrl-badge-sm-corner);padding:var(--smtc-padding-ctrl-text-side)
var(--smtc-gap-between-content-xx-small)}#serpvidans.vsacf .rmts .mc_bc
ems{display:none}#serpvidans.vsacf a.vsb_tr_t{color:var(--smtc-foreground-content-neutral-primary)}.vsacf
.va_tt .vsb_tr_chd .mc_vtvc_th_dock.rmouseover{height:36px}.vsacf .va_tt .vsb_tr_chd
.mc_vtvc_th_dock{height:92px;background:linear-gradient(180deg,var(--bing-smtc-background-ctrl-fade-on-i
mage-stop-0) 0%,var(--mai-smtc-background-ctrl-on-image-rest) 100%)}#serpvidans.vsacf .va_tt a.vsb_tr_t{padding:0
20px;font:var(--bing-smtc-text-global-body-2-alt-strong)}.vsacf .va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_meta,.vsacf .va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_title{color:var(--mai-smtc-foreground-ctrl-on-image-rest)}.vsacf
span.vcmt_ctt{font:var(--bing-smtc-text-global-caption2);margin:var(--smtc-gap-between-content-xx-small) 0
0;height:16px}#serpvidans.vsacf .vsb_tr_chd .mc_vtvc_tot .mc_vtvc_title
strong{font-size:14px;line-height:20px;display:unset}#serpvidans.vsacf .va_tt .b_slrdp
.slide:not(:first-child){margin-left:var(--smtc-gap-between-content-small)}#serpvidans.vsacf .va_tt
.vsb_tr_chd .mc_vtvc
.mc_vtvc_title{white-space:normal;display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}#se
rpvidans.vsacf .b_module_expansion_control .b_btnContainer
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.b_CompactExpansion{background-color:var(--bing-smtc-background-ctrl-neutral-rest);display:flex;justify-content:center;align-items:center;gap:4px;width:fit-content;height:auto;padding:8px 12px}#serpvidans.vsaf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion
.b_CompactExpansionBtnText{font:var(--bing-smtc-text-global-caption1-strong);color:var(--bing-smtc-foreground-content-brand-rest)}#serpvidans.vsaf .b_module_expansion_control .b_btnContainer
.b_CompactExpansion .b_arrow{display:flex;margin:0;height:auto}#serpvidans.vsaf
.b_module_expansion_control .b_btnContainer .b_CompactExpansion .b_arrow
path#Shape{fill:var(--bing-smtc-foreground-content-brand-rest)}#serpvidans.vsaf
.b_module_expansion_control
.b_btnContainer::after{content:"";position:absolute;width:100%;bottom:20px;left:0;height:1px;border-radius:1px;background:var(--smtc-stroke-ctrl-on-neutral-rest)}#b_results
.b_ans.b_vidAns{box-shadow:none;padding:12px 20px 0}#b_results .b_ans.b_vidAns
.vasac{padding:unset;margin:0}#b_results .b_ans.b_vidAns .vsa .b_attribution{padding-bottom:0}#b_results
.b_ans.b_vidAns .cardless .salink{margin:0}#b_results .b_ans.b_vidAns .mmlist
.mc_vtvc{margin-top:10px}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc
.mc_vtvc_meta{display:flex;flex-direction:column;justify-content:space-between;margin:0 10px 4px 12px}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_channel{color:#111}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_row_channel,#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area{color:#666}#b_results .b_ans.b_vidAns .mmlist .mc_vtvc .mc_vtvc_meta
.mc_vtvc_meta_block_area{bottom:0;height:unset}.b_dark .vsa.cardless
.mc_vtvc{background-color:unset}.mmtitle>a{display:block}.mc_fh{height:100%;border-radius:6px}.mc_tc_
bs{overflow:hidden}#mc_cwvc_1770661159440 { width:356px; max-width: 100%; } .mc_vtvc
.mc_vtvc_meta { padding: 16px 16px 16px 16px; } .mc_vtvc .mc_vtvc_meta_w { height: 139px; margin-top:
-0px; } .mc_vtvc .mc_vtvc_title { height: 54px; line-height: 18px; margin-bottom: 18px; margin-top: 0px; }
.mc_vtvc .mc_vtvc_meta_block_area { height: 35px; } .mc_vtvc .vtmu, .mc_vtvc .vtpl { bottom: 147px; }
.mc_vtvc_th_dock { height: 139px; } .mc_vtvc_th .cico { height: 200px; }
.mc_vtvc{background-color:#fff;box-shadow:0 0 0 1px
rgba(0,0,0,.05);line-height:0;margin:0;position:relative;border-radius:6px;overflow:hidden}.mc_vtvc.noshado
w{box-shadow:none}.mc_vtvc_con_rc{border-radius:6px;overflow:hidden;position:relative}.mc_vtvc>a{colo
r:#71777d;display:block;text-decoration:none;width:100%}.mc_vtvc>a:focus::after{outline:2px solid
#00a89d;width:100%;height:100%;content:"";outline-offset:-2px;position:absolute;top:0;left:0}.mc_vtvc_th{ba
ckground-color:#d5d5d5;position:relative}.mc_vtvc_th
.cico{border-radius:0}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{position:absolute;vertical-align:middle}.mc_vtvc_
ban_lo{bottom:0}.mc_vtvc_ban_up{top:0}.mc_vtvc_title{font-weight:normal;margin-bottom:11px;overflow:
hidden;color:#111;height:54px;line-height:18px}.mc_vtvc_title
a{display:inline-block;color:#111}.mc_vtvc_title
a:hover{text-decoration:underline}.mc_vtvc_src_ico{float:left;margin-right:4px}.mc_vtvc_act{height:16px;m
argin-top:-40px;padding:12px
8px;z-index:1}.mc_vtvc_actc{right:16px;bottom:16px;position:absolute;display:inline-block;z-index:1}.mc_v
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tvc_act_sep{border-top:1px solid #d5d5d5;height:40px;margin:0 8px}.mc_vtvc_fh
.mc_vtvc_act_sep,.mc_vtvc_fh .mc_vtvc_act{visibility:hidden}#serpvidans
.b_topTitle{margin-bottom:8px}.mc_vtvc_htc{width:100%;height:100%;position:absolute;top:0;bottom:0;left
:0;right:0}.mc_vtvc_htb{width:100%;height:100%;background:rgba(0,0,0,.7);position:absolute;top:0;bottom:
0;left:0;right:0}.mc_vtvc_ht{width:100%;padding:0
16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vert
ical-align:middle;text-align:center}.mc-vtvc_th_live_b{background-color:#c80000;color:#fff;display:inline-bl
ock;padding:2px 8px;font:11px/14px
Arial;border-radius:2px;text-transform:uppercase;height:15px;width:26px;position:absolute;left:8px;top:110p
x}.isvctrl .isv
.mc_vtvc_ban_up{left:0;right:initial}.mc_vtvc_ban_lo,.mc_vtvc_ban_up{right:0}.vt_text.b_IRight
.b_ILeft{margin:0 0 0 1px;height:14px;line-height:14px;padding:2px
8px;background:rgba(0,0,0,.75);border-radius:2px;font-weight:bold}.mc_vthtb{width:100%;height:100%;bac
kground:rgba(0,0,0,.7);position:absolute;top:0;bottom:0;left:0;right:0;display:table}.mc_vtht{width:100%;pad
ding:0
16px;line-height:16px;color:#fff;text-decoration:underline;word-break:break-word;box-sizing:border-box;vert
ical-align:middle;text-align:center;display:table-cell}.vt_text.b_IRight .b_ILeft{margin:0 0 0
1px;height:14px;line-height:14px;padding:2px
8px;background:rgba(0,0,0,.75);border-radius:2px;font-weight:bold}.emptyStyleForDebuggingPurpose{top:0
}.emptyStyleForDebuggingPurpose{top:0}.mc_vtvc_center_play{width:32px;height:32px;background-size:c
ontain;position:absolute;margin:auto;bottom:0;top:0;left:0;right:0;box-shadow:none;border-radius:0}.mc_vtvc
_center_play.rmvbg{width:32px;height:32px;background-image:none}.mc_vtvc_htb,.mc_vtvc_ht{display:no
ne}.vt_onhv .mc_vtvc_htb{display:table}.vt_onhv
.mc_vtvc_ht{display:table-cell}.mc_vtvc_center_play{display:inline-block}.vt_onhv
.mc_vtvc_center_play{display:none}.mc_vtvc .vtmu,.mc_vtvc .vtpl{bottom:163px}.vsarf .mc_vtvc
.vtmu,.vsarf .mc_vtvc .vtpl{bottom:122px}.svarh #mmcar .mc_vtvc .vtmu,.svarh #mmcar .mc_vtvc
.vtpl{bottom:137px}.svarht #mmcar .mc_vtvc .vtmu,.svarht #mmcar .mc_vtvc
.vtpl{top:8px;left:8px}.mc_vtvc_center_play{background-image:url(data:image/svg+xml,%3Csvg%20width
%3D%2232%22%20height%3D%2232%22%20viewBox%3D%220%200%2032%2032%22%20fill%3D%22
none%22%20xmlns%3D%22http%3A%2F%2F%2F2000%2Fsvg%22%3E%0D%0A%20%20%20%20%3Cr
ect%20width%3D%2232%22%20height%3D%2232%22%20rx%3D%2216%22%20fill%3D%22black%22%
20fill-opacity%3D%220.6%22%2F%3E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M14.2354%201
0.1923C13.2355%209.62986%2012%2010.3524%2012%2011.4997V20.5C12%2021.6472%2013.2355%202
2.3698%2014.2354%2021.8073L22.2356%2017.3073C23.2551%2016.7339%2023.2551%2015.2661%2022.
2357%2014.6926L14.2354%2010.1923Z%22%20fill%3D%22white%22%20fill-opacity%3D%220.9%22%2
F%3E%0D%0A%3C%2Fsvg%3E)}.mc_vtvc_meta{box-sizing:border-box;display:inline-block;line-height:18
px;position:relative;width:100%}.mc_vtvc_meta_block{bottom:0;position:absolute;width:100%}.mc_vtvc_m
eta_row{line-height:16px;font-size:11px;height:17px;overflow:hidden;text-overflow:ellipsis;white-space:now
rap}.mc_vtvc_meta_row a{display:inline-block}.mc_vtvc_meta_row
a:hover{text-decoration:underline}.mc_vtvc_meta_block_area{position:relative}.mc_vtvc_meta_block,.mc_v

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tvc_meta_block a{color:#444}.b_dark
.mc_vtvc_meta_block{color:#edebe9}.mc_vtvc_meta_row>:nth-of-type(n+2)::before{content:"
"}.mc_vtvc_meta_row .mc_vtvc_meta_row_channel::before{content:"
"}.mc_vtvc_kmt_title{line-height:18px;padding-bottom:4px;font-weight:bold;color:#00809d;text-transform:u
ppercase;font-size:11px}.mc_vtvc_kmt,.mc_vtvc_con_rc.onhov .wkmt
.mc_vtvc_meta_row,.mc_vtvc_con_rc.onhov .wkmt .tbc_tt{display:none}.mc_vtvc_con_rc.onhov .wkmt
.mc_vtvc_title{max-height:18px;margin-bottom:18px;overflow:hidden}.mc_vtvc_con_rc.onhov.mmsts
.mc_vtvc_title{visibility:hidden}.mc_vtvc_con_rc.onhov
.mc_vtvc_kmt{display:block}.mc_vtvc_kmt_content
.b_factrow{line-height:17px;font-size:11px;max-height:34px;overflow:hidden;text-overflow:ellipsis;padding:
0 16px 0 0;color:#444}.mc_vtvc_meta
.mc_vtvc_kmt_title{line-height:18px}.mc_vtvc_title:hover{text-decoration:none}.mc_vtvc_meta_pubdate{co
lor:#444;padding-bottom:3px}.mc_vtvc_meta_channel{color:#444}.mc_vtvc_meta_w,.mc_vplvc_meta_w{po
sition:relative}.mc_vtvc_meta_bg_w,.mc_vplvc_meta_bg_w{height:100%;width:100%;overflow:hidden;posit
ion:absolute;top:0}.mc_vtvc_meta_bg_w .cico,.mc_vplvc_meta_bg_w
.cico{border-radius:0;overflow:visible}.dg_u .mm_vidch_th_c{overflow:visible}.dg_u .mm_vidch_th_bg
img{margin-top:-20px}.emptyStyleForDebuggingPurpose{top:0}.mc_vtvc_meta_w
.mc_vtvc_meta{background:rgba(255,255,255,.75)}.mc_vtvc_meta_bg_w img,.mc_vtvc_meta_bg_w
.mc_vtvc_cb_w{filter:blur(25px);transform:scale(1.2)}body[--video-metadata-channel-color:#3c3c3c]body.b
_dark[--video-metadata-channel-color:unset].vsarf .mc_vtvc_meta_pubdate{color:unset}.vsarf
.mc_vtvc_meta_channel{color:var(--video-metadata-channel-color)}.vsarf .mc_vtvc .mc_vtvc_meta_w
.mc_vtvc_title,.vsarf .mc_vtvc .mc_vtvc_meta_w .mc_vtvc_title strong{font-weight:bold}.vsarf
.mc_vtvc_meta_w .mc_vtvc_meta_row{font-size:13px}.emptyStyleForDebuggingPurpose{top:0}.vsarf
.mc_vtvc_th
.cico{height:132px}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.empt
yStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurp
ose{top:0}.emptyStyleForDebuggingPurpose{top:0}.emptyStyleForDebuggingPurpose{top:0}.vtbc
.mv_vtvc_play{display:inline-block;position:absolute;bottom:8px;left:9px;height:8px;width:7px}.vtbc
.mv_vtvc_play_ext{background:url(/rp/Lp38sn_O4jegSK0IHxZVxyp-yKQ.png) -172px
-31px;display:inline-block;height:8px;width:12px;position:absolute;bottom:8px;left:6px}.vtbc
.pivot{height:20px;width:8px;min-width:8px}.vtbc
.mv_vtvc_play{background:url(
MAAADHKvg1AAAIVBMVEX//////////9/gMdvAAAACnRSTIMAETNEVWaImbv
uo4D1oAAAAB9JREFUCB1jmMoABKuaQcSqQhCxKgFGgLhNQIkpQAwA8zkLyQA16F0AAAASUVO
RK5CYII=)}.mc_bc_w{height:18px;padding:8px;text-align:right}.mc_bc{background-color:rgba(0,0,0,.75);p
adding:2px
8px;line-height:14px;color:#fff;display:inline-block;vertical-align:middle;border-radius:2px;font-weight:bold}
.mc_bc_w .pivot{text-align:center;margin-right:1px;height:14px}.vsarr .mmgrid .mc_bc_w
.mc_bc{background-color:rgba(0,0,0,.75);opacity:1}.mmsi{height:16px;width:16px;position:relative;top:5px;
padding-right:var(--smtc-gap-between-content-xx-small)}.mmsi-microsoftnews,.mmsi-msn{top:3px}.vrhdata

```

Working principle of photovoltaic panel inverter

```

{display:none}.vrhc line.nhvpv .pffvi,.vrhc line.nhvpv[data-tps="S"] .pffvt,.vrhc line.nhvpv[data-tps="M"]
.pffvt,.vrhc line.nhvpv[data-tps="L"] .pffvt{display:inline-flex}.vrhc line.nhvpv .vrhct.pffv
.vrhol{display:none}.vrhc line.nhvpv .vrhct.pffv
.player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color
.5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);ga
p:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.mc_vtvc_th img{transition:all .3s
ease-out}.nhvpv+.mc_vtvc_th
img{transform:scale(1.1)}.smtplayerhtml5{height:100%;width:100%;overflow:hidden}.smtplayerhtml5
video{min-height:100%;min-width:100%}.smtplayerhtml5
.videoplaying{background-color:#000}.smtplayerhtml5.hide{display:none}.pffvt{display:none;color:var(--ma
i-smtc-foreground-ctrl-on-image-rest);font:var(--bing-smtc-text-global-subtitle2-strong)}.pffvi{mask:url(/rp/ui
07wU6K7FR_inzG7DRbP1i8fGo.svg) center
no-repeat;mask-size:12px;background:var(--bing-smtc-background-card-on-image-default);width:20px;height
:20px;flex-shrink:0;align-self:flex-start}[data-tps="L"]
.pffvt{font:var(--bing-smtc-text-global-subtitle2-strong)}[data-tps="L"]
.pffvi{width:22px;height:22px;mask-size:16px}[data-tps="S"] .pffvt{font-size:0}[data-tps="S"]
.pffvi{width:24px;height:24px;mask-size:24px;align-self:center}.hvpv.h5s
.pffvt{display:inline-flex}.hvpv.h5s .vrhct.pffv .vrhol{display:none}.hvpv.h5s .vrhct.pffv
.player_ol{background:var(--mai-smtc-background-ctrl-on-image-hover);transition:background-color
.5s;display:flex;align-items:center;justify-content:center;padding:var(--smtc-gap-between-content-x-small);ga
p:var(--smtc-gap-between-content-x-small);box-sizing:border-box}.pffvt{text-decoration:underline}.vrhct
.vrhol{position:absolute;width:100%;height:35px;max-height:35px;bottom:0;left:0;padding:0;background:non
e;display:block;z-index:9}.vrhct .vrhol.hide,.vrhct .vrhol
.hide{display:none}.vrhot{white-space:nowrap;text-overflow:ellipsis;overflow:hidden;display:inline-block;po
sition:absolute;max-width:240px;height:18px;line-height:14px;margin-left:8px;top:10px;left:0;right:0;border
radius:2px;padding-right:8px}.vrhot div{display:inline-block}.vrhot
nt{color:#fff;font-size:11px;font-weight:bold;background-color:rgba(0,0,0,.75);padding:2px
8px;margin-left:0;top:0;box-sizing:border-box;position:relative}.vrhc
.ricons{position:absolute;right:8px;top:10px;left:auto;bottom:auto;height:18px;display:inline-block;cursor:poi
nter}.vrhol.icons_1 .vrhot{margin-right:27px}.vrhol.icons_2 .vrhot{margin-right:49px}.vrhol.icons_3
.vrhot{margin-right:79px}.vrhol .vrhot .vsb_tr_chd .vrhol.icons_1
.vrhot{margin-right:0}.vpb{position:absolute;display:block;bottom:0;left:0;height:4px}.vpb
div{position:absolute}.vpb .nt{width:0;background:#fff}.vpb
nt.test{display:none}.vpb.back{background-color:#999}.vrhct
.vrhol.npb{height:36px;max-height:36px}.vrhol
.vadda{width:22px;height:18px;padding:0;margin-right:0;margin-left:2px;bottom:0;position:relative;display:i
nline-block;z-index:1;background:rgba(0,0,0,.75);border-radius:2px;overflow:hidden}.vrhol
.vadda.hide{display:none}.vrhol .vadda .mc_vfaa{margin:3px 5px}.ricons .vol{float:left}.ricons
.adultFlag{float:right}.vol{width:22px;height:18px;bottom:0;margin-left:1px;margin-right:1px;position:relati
ve;display:inline-block}.vol.hide,.vol .hide{display:none}.vol

```

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```
.bg{background:rgba(0,0,0,.75);border-radius:2px}.vol.bg,.vol
        nt{position:absolute;bottom:0}.vol
        .vol.bg.volnb{border-radius:0 0 2px 2px}.vol
        .volsliderHandle.bg{border-radius:2px 2px 0 0}.vol
        nt
        .volsliderHandle{height:70px;display:none;width:22px;float:left;bottom:18px;position:absolute;display:block
        }.vol
        nt
        .volsliderHandle.hide{display:none}.volsliderHandle
        .vsb{height:54px;width:4px;background-color:#999;margin:9px
        auto
        8px;position:relative;display:block;border-radius:2px}.volsliderHandle
        .vsh{height:6px;width:14px;padding:9px
        7px
        9px
        7px;margin:0
        -12px;display:block;position:absolute;top:30px}.volsliderHandle
        .vsh.hide{display:none}.volsliderHandle
        .vshi{height:4px;width:14px;background-color:#fff;border-radius:2px}.volMuteIcon{width:16px;height:14px;
        margin:2px
        4px;float:left}.volMuteHandle{width:22px;height:18px}.vo{background:url(/rp/ffZxBXEIP9WYOO0jhTaEl
        yLhEVU.svg)
        no-repeat}.vm{background:url(/rp/fsX-ZVd03wB2TL0vmQJxSp4U9vs.svg)
        no-repeat}.vl{background:url(/rp/YXYMPC1Rry_XJGc7Yg8lR4B2eEs.svg)
        no-repeat}.vf{background:url(/rp/NosrlR4amKTs1zYxWy3laZN3HRk.svg)
        no-repeat}@media(forced-colors:active){.vol{forced-color-adjust:none}.vrhc
        line
        .vt_vp,.vrhc.popout
        .vt_vp,.vrhc.mousefollow
        .vt_vp{position:absolute;bottom:0;border:hidden;padding:0;top:0;left:0;z-index:3}.vrhc
        .hide{display:none}.vrh_clc
        .vt_vp,.vrh_clc
        .vrhc
        .vrhi,.vrh_clc
        .player_ol{cursor:pointer}.vrh_clc
        .cico{border-radius:0}.vrhc{border:hidden;top:0;left:0;padding:0}.vrhc.mousefollow
        .vrhc,.vrhc.popout
        .vrhc{background-color:#999}.vrhpc.load
        .player_ol{background:url(/rp/J_o2maogFDeUOsovPJL-ofEuxJ4.gif) center center no-repeat}.vrhc
        line
        .vrhc
        .vrhi,.vrhc.popout
        .vrhc
        .vrhi,.vrhc.mousefollow
        .vrhc
        .vrhi{position:absolute!important;border:hidden;z-index:2;padding:0;left:0;top:0}.player_ol{position:absolute
        ;width:100%;height:100%;bottom:0;border:hidden;z-index:7}.vrhc.popout,.vrhc
        line,.vrhc.mousefollow{border-radius:6px;overflow:hidden;display:table-row-group;background:none}.vrhc.p
        opout,.vrhc.mousefollow{z-index:4;box-shadow:0 4px 4px rgba(0,0,0,.1),0 2px 80px rgba(0,0,0,.2)}.vrhc
        line{z-index:1;margin:0}.vrhc.popout,.vrhc
        line{position:absolute;top:0}.vrhc.popout{border:1px
        solid
        #fff}.vrhc.mousefollow{position:fixed}.vrhpc{position:relative;top:0;left:0;display:table-row}.vrhpc
        .vrhc{position:relative;overflow:hidden}.vrhc.hide{display:none}@keyframes
        vh_fadein{from{opacity:0}to{opacity:1}}.vrhc.not(.hide){animation:vh_fadein
        250ms}.vrhc
        line
        img{color:transparent}.vrhc
        line.fullsize{height:100%}.vrhc,.vrhc.hover,.vrhc.link,.vrhc.active,.vrhc.visited{color:#000;text-decoration:no
        ne}.vrhc.vrh_clc{cursor:pointer}a.hover-anchor{display:block;height:100%;width:100%;text-decoration:none
        }.vrhstat{height:0;overflow:hidden}.mmlist
        .mc_vtvc
        .mc_vtvc_meta
        {padding:12px 16px 16px 16px;}
        .mmlist
        .mc_vtvc
        .mc_vtvc_title
        {
        height:44px;
        line-height:22px;
        margin-bottom:0px;
        margin-top:0px;
        }
        .mmlist
        .mc_vtvc
        .mc_vtvc_meta_block_area
        {height:40px;}
        .mmlist
        .mc_vtvc
        .vtmu,
        .mmlist
        .mc_vtvc
        .vtpl
        {bottom:120px;}
        .mmlist
        .mc_vtvc
        .th_dock
        {height:112px;}
        .mmlist
        .mc_vtvc
        .th
        .cico
        {height:131px;}
        .mmlist
        .mc_vtvc
        {margin:10px
        1px
        0}
        .mmlist
        .mc_vtvc
        .con_rc
        {display:flex}.cardless
        .mmlist
        .mc_vtvc
        .con_rc
        {height:112px}.mmlist
        .mc_vtvc
```

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```
.mc_vtvc_meta{display:flex;flex-direction:column;justify-content:space-between;margin:0 10px 4px 12px;padding:0}.mmlist
.mc_vtvc_title{font-weight:400;font-size:16px;height:44px;line-height:22px;margin-bottom:0;margin-top:0;color:unset}.mmlist
.mc_vtvc_meta_row{font-size:13px}.mmlist
.mc_vtvc_meta_block_area{height:unset}.mmlist
.mc_vtvc_vtmu,.mmlist
.mc_vtvc_vtpl{bottom:8px}.cardless
.mc_vtvc_vtvc{box-shadow:none}.cardless.mmlist
.mc_vtvc_center_play{width:32px;height:32px}.cardless.mmlist
.mc_vtvc_title{font-size:16px;color:unset}.cardless.mmlist
.mc_vtvc_meta_row{line-height:20px}.cardless.mmlist
.mc_vtvc_meta_pubdate{padding-bottom:2px;color:#666}.cardless.mmlist
.mc_vtvc_th_cico,.cardless.mmlist
.mc_vtvc_th_div.rms_img{border-radius:6px}.cardless.mmlist
.mc_vtvc_th{height:111px}.cardless.mmlist
.mc_vtvc_htc{border-radius:6px;overflow:hidden}#serpvidans.vasac.cardless{box-shadow:none}.cardless.mmlist
.mc_bc{padding:2px 8px;line-height:14px;border-radius:2px;font-weight:normal}.mmlist
.mc_vtvc: hover
.mc_vtvc_title{text-decoration:underline}.mmgrid>div{width:197px;display:inline-block;margin-right:8px;margin-bottom:8px;box-shadow:0 0 1px rgba(0,0,0,.05);position:relative;vertical-align:top;overflow:hidden;white-space:normal;border-radius:6px}.vsarr
.mmgrid>div,.vsarr1stbig
.mmgrid>div{margin-right:8px;margin-bottom:8px}#serpvidansrr
.mc_vtvc_meta{height:auto}#serpvidansrr
.mc_vtvc_title{display:-webkit-box;-webkit-line-clamp:2;-webkit-box-orient:vertical}.mmgrid
.mc_tc{border:0}.vsa
.mmgrid>div:nth-child(3n){margin-right:0}.vsa
.b_moreLink{padding-top:4px}#serpvidansrr
.mc_vtvc_meta_row{line-height:18px;font-size:100%;height:17px}.vsarr
.mmgrid>div:nth-child(2n){margin-right:0}#serpvidansrr
.mc_vtvc_vtmu,#serpvidansrr
.mc_vtvc_vtpl{bottom:128px}.vsarr1stbig
.mmgrid>div:nth-child(2){margin-right:0}#serpvidansrr.uipolish
.mc_vtvc_meta_pubdate,#serpvidansrr.uipolish
.mc_vtvc_meta_channel,#serpvidansrr.uipolish
#vidans2
.b_videocard_video_metadata
.video_source{color:#767676}#serpvidansrr
#vidans2
.b_videocard_video_metadata_container,#serpvidansrr
#vidans2
.b_videocard_video_metadata_container
.video_metadata>h3{width:100%}@media(max-width:1362.9px){#serpvidansrr
.mmgrid>div{width:168px;height:206px}#serpvidansrr
.mmgrid>div.cico,#serpvidansrr
.mmgrid>div.cico.rms_img{width:168px;height:100px}#serpvidansrr
.mc_vtvc_mc_vtvc_meta{padding:12px}#serpvidansrr
.mc_vtvc_mc_vtvc_title{height:32px;line-height:16px;margin-bottom:16px}#serpvidansrr
.mc_vtvc_mc_vtvc_meta_block_area{height:34px}#serpvidansrr
.mc_vtvc_meta_row{line-height:15px;font-size:13px;height:15px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:4px}#serpvidansrr
.mc_vtvc_vtmu,#serpvidansrr
.mc_vtvc_vtpl{bottom:114px}#serpvidansrr
#vidans2
.b_videocard_videoPlayer,#serpvidansrr
#vidans2
.b_videocard_videoPlayer.cico,#serpvidansrr
#vidans2
.b_videocard_videoPlayer.cico.rms_img{width:343px!important;height:194px!important;margin-right:0}
}@media(max-width:1274.9px){#serpvidansrr
.mmgrid>div{width:124px;height:164px}#serpvidansrr
.mmgrid>div.cico,#serpvidansrr
```

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```
.mmgrid>div .cico .rms_img{width:124px;height:76px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta{padding:8px}#serpvidansrr .mc_vtvc
.mc_vtvc_title{height:32px;line-height:16px;margin-bottom:12px}#serpvidansrr .mc_vtvc
.mc_vtvc_meta_block_area{height:28px}#serpvidansrr
.mc_vtvc_meta_row{line-height:13px;font-size:11px;height:13px}#serpvidansrr
.mc_vtvc_meta_pubdate{padding-bottom:2px}#serpvidansrr .mc_vtvc .vtmu,#serpvidansrr .mc_vtvc
.vtpl{bottom:96px}#serpvidansrr #vidans2 .b_videocard .videoPlayer,#serpvidansrr #vidans2 .b_videocard
.videoPlayer .cico,#serpvidansrr #vidans2 .b_videocard .videoPlayer .cico
.rms_img{width:256px!important;height:144px!important;margin-right:0}#serpvidansrr .maskthumb
.mc_bc_w{padding:8px 4px 4px 8px}#serpvidansrr.withsplitline
.mmgrid>div:nth-last-child(1),#serpvidansrr.withsplitline
.mmgrid>div:nth-last-child(2){margin-bottom:24px}#serpvidansrr.withsplitline .mmgrid{border-bottom:1px
solid #ececec;margin-bottom:16px}#serpvidansrr #vidans2 .b_videocard
.video_metadata{max-width:auto;padding:12px 16px}#serpvidansrr #vidans2
.b_videocard{margin-bottom:12px;box-shadow:0 0 1px rgba(0,0,0,.05),0 2px 3px
rgba(0,0,0,.1);border-radius:6px}#serpvidansrr .b_rich{padding-top:0}#serpvidansrr #vidans2
.videoPlayer{border-radius:6px 6px 0 0;overflow:hidden}#serpvidansrr #vidans2 .b_videocard
.video_metadata>h3{white-space:nowrap;overflow:hidden;text-overflow:ellipsis;-webkit-line-clamp:1;line-he
ight:15px;height:15px;font-size:13px;color:#000;margin-bottom:20px;font-family:"Arial",Helvetica,Sans-Seri
f;font-style:normal;display:block}#serpvidansrr.vsarr1stbig #vidans2 .b_videocard .video_metadata
.actionmenu{display:none}#serpvidansrr #vidans2 .b_videocard .video_summary,#serpvidansrr #vidans2
.b_videocard .video_source{line-height:15px}#serpvidansrr #vidans2 .b_videocard .videoPlayer
.vtbc{right:0}.vsb_tr_c{position:relative;width:100%;overflow:hidden;background:#1d1b28;height:583px;ma
rgin-bottom:16px}.vsb_tr_c.tr_nh{height:294px}.vsb_tr_c .mm_vrc h2,.vsb_tr_c .mm_vrc
.see_more{display:none}.vsb_tr_c .mm_vrc>div{padding-bottom:20px}.vsb_tr_c
.vsb_tr_t{position:absolute;top:16px;left:160px;font:normal 16px/19px
"Arial",Helvetica,Sans-Serif;font-weight:700;color:#fff;z-index:1}.vsb_tr_c
.vsb_tr_t::after{width:17px;height:12px;display:inline-block;background-size:7px
12px;background-repeat:no-repeat;background-position-x:right;opacity:.7;content:""}.vsb_tr_c
.vsb_tr_t:hover::after{opacity:1}.vsb_tr_c .mm_vrc
.mc_vtvc{background-color:#585858;border-radius:6px}.vsb_tr_c .mm_vrc
.mc_vtvc_con_rc{border-radius:6px}.vsb_tr_c .vsb_tr_chd{position:absolute;bottom:0;width:100%}.vsb_tr_c
.onhov .mc_vtvc_ban_lo{display:none}.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_title{line-height:15px}.vsb_tr_chd .mc_vtvc_tot .mc_vtvc_meta_row,.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_meta_row a{color:#dadada}.vsb_tr_chd .grad_b{top:30%;height:auto}.vsb_tr_chd .mc_vtvc_tot
.mc_vtvc_meta_row{font-size:12px;line-height:16px;height:16px}.vsb_tr_chd .mc_vtvc_tot
.meta_pd_content{display:none}.vsb_tr_chd .mc_vtvc_tot .mc_vtvc_title strong{font-weight:500}.vsb_tr_c
.slide video{object-fit:cover}.vsb_tr_c .mc_vtvc_th .cico{width:100%;height:100%}.vsb_tr_c
.vrhcac{width:647px;position:absolute;width:calc(42% - 160px);bottom:200px;margin:0 0 0
160px;height:auto;padding:0;pointer-events:auto}.vsb_tr_c .vrhcac .mc_vtvc_title{font:normal 30px/35px
```

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```
"Arial",Helvetica,Sans-Serif;font-weight:700;height:70px;overflow:hidden;color:#fff;text-overflow:ellipsis;di
splay:-webkit-box;-webkit-box-orient:vertical;-webkit-line-clamp:2}.vsb_tr_c .vrhcac
.mc_vtvc_meta_block_area{height:50px;margin:12px 0 0 0}.vsb_tr_c .vrhcac
.mc_vtvc_meta_row{font:normal 13px/15px "Arial",Helvetica,Sans-Serif;margin:5px 0 5px
0;color:#dadada}.vsb_tr_c .mm_vrc .b_overlay .btn.bigrounded .cr>div,.vsb_tr_c .mm_vrc .b_overlay
.btn.bigrounded .cr>div: hover{background-image:url(/rp/qA6EopzJjTm5qQJvnXlrWGNP778.svg)}.vsb_tr_c
.vsb_tr_t::after{background-image:url(data:image/svg+xml,%3Csvg%20width%3D%227%22%20height%3D
%2214%22%20viewBox%3D%220%200%207%2014%22%20fill%3D%22none%22%20xmlns%3D%22http
%3A%2F%2F%2F2000%2Fsvg%22%3E%0D%0A%20%20%20%20%3Cpath%20d%3D%22M0.186925%2
01.19491L5.4643%207L0.186925%2012.8051C-0.0623082%2013.0792%20-0.0623082%2013.5214%200.18
6925%2013.7944C0.436158%2014.0685%200.838112%2014.0685%201.08628%2013.7944L6.81334%207.4
9465C6.93212%207.36515%207%207.18433%207%207C7%206.81567%206.93212%206.63485%206.8133
4%206.50535L1.08628%200.205616C0.837052%20-0.0685388%200.435097%20-0.0685388%200.186925%
200.205616C-0.0612477%200.479772%20-0.0623082%200.92192%200.186925%201.19491Z%22%20fill%
3D%22white%22%20fill-opacity%3D%220.7%22%2F%3E%0D%0A%3C%2Fsvg%3E)}.va_tt
.mm_vrc{padding:11px 2px 0 0}.va_tt .vsb_tr_t{position:relative;top:auto;left:auto;font:normal 18px/22px
"Arial",Helvetica,Sans-Serif;font-weight:400;color:#4007a2;z-index:auto}.b_dark .va_tt
.vsb_tr_t{color:#82c7ff}.va_tt .vsb_tr_tp,.va_tt .vsb_tr_tl{display:inline-block;margin-right:5px}.va_tt
.vsb_tr_chd{position:relative}.vsb_tr_c.va_tt{--va-st-padding-bottom:16px;height:auto;background-color:tran
sparent;margin-top:22px;overflow:visible;padding-bottom:var(--va-st-padding-bottom);margin-bottom:0}.va_
tt .mc_vtvc_ban_lo,.va_tt .vsb_tr_t::after,.va_tt .mc_vtvc_hover .mc_vtvc_center_play,.va_tt .vsb_tr_chd
.vt_onhv .mc_vtvc .mc_vtvc_meta{display:none}.va_tt .mc_vtvc_hover .mc_vtvc_ht,.va_tt .mc_vtvc_hover
.mc_vtvc_htb{display:table-cell}.va_tt
.mc_vtvc_htb{padding-top:50px;background:linear-gradient(360deg,rgba(0,0,0,.6) 60.35%,rgba(0,0,0,0)
100%);font-size:11px;line-height:13px}.va_tt .mc_vtvc_ht{padding:0 24px;text-shadow:0 1px 2px
rgba(0,0,0,.2)}.va_tt .mc_vtvc_center_play{bottom:52px}.va_tt .mc_vtvc_hover
.mc_vtvc_title{max-height:52px;white-space:normal;display:-webkit-box;-webkit-box-orient:vertical;-webkit-
line-clamp:4}#serpvidans .va_tt .slide{margin-right:0;vertical-align:bottom;transition:width .2s,height
.2s}#serpvidans .va_tt .slide:not(:first-child){margin-left:8px}#serpvidans .va_tt
.mm_vrc>div{padding-bottom:0}.va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_meta{height:auto;padding:8px;color:#ddd}.va_tt .vsb_tr_chd
.mc_vtvc_th_dock{height:72px;position:absolute;bottom:0;background:linear-gradient(360deg,rgba(0,0,0,.55)
60.35%,rgba(0,0,0,0) 100%)}.va_tt
.mc_vtvc_meta_row_channel{font-size:13px;line-height:15px;font-weight:500;color:#fff;white-space:nowrap;
overflow:hidden;text-overflow:ellipsis;margin-bottom:6px}.va_tt .vsb_tr_chd .mc_vtvc
.mc_vtvc_title{height:auto;font-size:11px;line-height:13px;color:#ddd;white-space:nowrap;overflow:hidden;t
ext-overflow:ellipsis}.va_tt .slide .mc_vtvc{width:100%}.va_tt .slide video{object-fit:cover}.va_tt
.mc_vtvc_th .cico{width:100%;height:204px}.va_tt .b_overlay
.btn.bigrounded{top:auto;bottom:0;margin-bottom:93px}.va_tt .vt_onhv
.mc_vtvc_htb{padding-top:86px}.va_tt .vsb_tr_chd .mc_vtvc .vtmu,.va_tt .vsb_tr_chd .mc_vtvc
```

Working principle of photovoltaic panel inverter

```
.vtml{bottom:6px}.va_tt .vcmt_ct,.va_tt .vcmt_ctt{display:block;margin-bottom:4px;font-size:11px}.va_tt
.vasyt::before{content:"";background:url(
AAAYCAYAAADgdz34AAABRkIEQVR4Ae2UT0rDQBjFX7QICtaoIOimAReiUNuV696jmx5A8AalZ/AIpb
bdwIT2B6wqIwYkuWgnBP7jo+D7SkcmiM4kd6KYPfjNDeHlfJt8kwEYOBXqhgENOd+SGnJKQ7JFjsr3k/j
mZkg/yQn7IE7IncAwjvEImRHICskKzQMdjuOZWsrcWNS7hX+dmgQurNQzxD52YBQ6s1maTb3UCtNsoo
TOzwI7THkXAYAD0+9narVyTR9aGtVoqpyRRqtdzNXls7qCCMqpWgXodqNVsrrkZ/ImiimMe6g4wHLqci
Qx6BzOXGwn93S7QaBQJF6Uy6B28Wq3y1HKSZC6uL7PAG1wFymkg35FY/jX899Kfkxk6vE/JFIRrhvw
XJEH8r5C8Iw8kmudGyzbH037nI6Q9UnWu8i+eDnf38iamC7saVDkJG60Fv0CnB4IzftPhuMAAAAASUVO
RK5CYII=) no-repeat;background-size:18px 18px;padding-right:22px}.va_tt
.vasig::before{content:"";background:url(
AAAYCAYAAADgdz34AAAEsUIEQVR4Ad1UTWxUVRT+zn3vzbz5ozNtFQpRa2hDjC6qhKWICwjWTV
mwMRKIMSG44W9hXIGRRKPRUMMCEySgidHEXFXjxkgJEU0ISEhEaItg0bZU7bTz99689+49nvem5SfT
hVt5yc3ce+ee7zvfd869wP/9o/sXm4bKxUaAfQ6bnVkt9GZNiAwuDPcmiM4MLDZwAKDmJNgJoKWGZ
O6ZZhPK0RHj44+O99GsGITuRhkzJkshwMF00ROwHM6hKzhCnjaREjFBCYmMHcDWYYmJSQKgbIQgi
7XIPXiEom9RKBcf1+X1gMF3USBZQjBk2sdPLY2h+6VTgJqSdYqybyVfWPGw9x4FeWxKiIhCY0FH9ZA
l7L2yt9vP0BQ0s2dHZJ5hxB05zReObIWvQMF/Jdv+uwMrrzzMxo1g4BsNI29q42gK/J6SzGB8bH9zf4E/PqJ
MUyN/A79ZxVpMSHFWgKMmGGSGuTXIZBbvxi9BzYgm1+PK3vOJgQe7N4I3HsEuoFOIYht6Xu+E79+
dAXTX40t1iCQodkRI2yxR6xiEpNwfjBEsVmVTy6iY/d6rO5zURmwvCcHbQTdknJe3i875FkHV6c5G4uI0
dNyva46Dz0EqX6u0GFNPzRG1T78HsQxUqAYOQXQAg6+/Nsj90h34TcRIASBUUWFatWJev0xDjIqcaZn
gKXPt9Bcb/4IxeK7wipjU+j84sdKL96AnqqKhrsGJCcNVIki9oUaWojKKIuo4IMEcm6k6bZogj5A9uIazVU3j
jGPFNGbI7/5RkqfnYQKw4NorLnU6lGC4YohFK+nLlnkVqarOB5dOAvuKgla8dakMNVyfYZBOcuAbOTI
FWDsuqEO7e5+e2PsPt7BLQORY0WgVxKkjkjTvmAgg6a4xLNwqVqIk/AiKSXJMAxJnVEghRIjFXoniPC
hmQ1ZBNp+W5KCDlgYzmdgVqlgpqWkL91h8xoGRrbkwwNfgCrNU52RRS2YvzsbneEJ67kGQvWbeSEkt
VHE9+ew3y4nlKIYIU0nrISibSj/6x9yk7fByZj98lff68KBD7tmxJjSPHU8sAaUWUUBPFaK22uQTf9DIPf
YLEy1NtZ1SaVD6PAP1A+9Dj09BmfbNjhbN0NPjQoxfzfz/G0my2Onf1WCyDMzYIFzeQVWscHsGtJz15N
1astmNL87Gbcna32bGqffAk5KbCQ5BdKzTYvEV8CXi7fhqSTG3BiXA02i+x7puwRcikgIoOtXObp5idKDr
4HVAAsLJi8SzY5y8yyHYhLGLCuzLk9GzBqkNg0hv34noh5/YTFwnIjdOdzmC8JY8/E+YDFN95CBYlX+Gu
3U/XC24PK/yRddvQx/+D2pWSRvdyhg1s12gg59Chl9mDKW1MzAO3cE1rWvobr6oHKPin4N8QocCUAk
T0RIbGZnoCd+I3NN8IwicqRdTSQqotNtBMgFw6qQH1JufOderNz7tPrzBfz3JehZI8BifODDeHUZNXAjJF
RtUNVipGyilNiWkmse6MvGjoaxnNTyN0NFV7172S3sstxML9nxBRL7100c+my8BhmvwqZRJVovMKoSt
CDgQsQV+xbNq1OmYoZLo6PzeGi+fwFJbz1IhJBeawAAAABJRU5ErkJggg==)
no-repeat;background-size:18px 18px;padding-right:22px}.va_tt
.vastt::before{content:"";background:url(
AAAMCAYAAABWdVznAAA90IEQVR4AZWQu2sCQRDgJyYHCQdqPEKqShr7NOZFYvQJiJ1YKYII
1irY+ieoiKXYKZaniI3WIoqg4AMfhaAcCMJ93q2vwxODz6WnZnf7swQEUU0w6D1Wn7y4cOJO/sLL8c
H8ps1ernCdYCueCoJm03iAyaLGWa3SszDFg028BoBvnfdw4IWr+hTgtLVUX67ZcBcjCKV0HEl/h0epT2c
gT8lBAljyt+KNNsHMLU3yhUUebH+xGwWx+JRjOKdutUk+53wZVCPLGvnj/f2ZCFchXh6RjDwYS1dnF
LHo8XvZIMNVuE7PyD1SScATcHyqhuNevQt8H62BZHiaf6ZtXqegAAAABJRU5ErkJggg==)
no-repeat;background-size:contain;padding-right:20px}.va_tt
.vasfb::before{content:"";background:url(/rp/zvtkyPveEhrXqHA-euzAa983fpQ.png)}
```

Working principle of photovoltaic panel inverter

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no-repeat;background-size:contain;padding-right:20px}.vcmt_ckt.vasyt::before{background-size:15px
15px;padding-right:19px}.vcmt_ckt.vasig::before{background-size:15px
15px;padding-right:19px}.vcmt_ckt.vastt::before{background-size:contain;padding-right:17px}.vcmt_ckt.vasf
b::before{padding-right:17px}.mm_vrc{padding:24px 32px}@media screen and
(max-width:1022px){.mm_vrc{margin:0}}@media screen and
(max-width:766px){.mm_vrc{margin:0}}.mm_vrcc{padding:0 0 32px 0;margin-bottom:0}.mm_vrcc
h2{padding-bottom:20px}.mm_vrcc h2 a{font-family:"Segoe
UI",Arial,Helvetica;font-size:20px;color:#000;line-height:1.8px}.mm_vrcc .b_overlay
.btn{z-index:3}.mm_vrcc .vrhc{z-index:2}.mm_vrcc .mc_vtvc_th .cico{padding-bottom:0}#dg_c
.mm_vrc,#dg_c .mm_vrcc{padding:8px 16px 0 16px}#dg_c .mm_vrcc .mc_vtvc{width:100%}#dg_c
.mm_vrcc a:hover{text-decoration:underline}.isvctrl .mm_vrcc
.slide{overflow:visible}.mm_vrc{padding:16px 100px 0 160px}.mm_vrc .b_overlay
.btn.bigrounded.next{right:-44px}.mm_vrc .b_overlay .btn.bigrounded.prev{left:-44px}.mm_vrc .b_overlay
.btn.bigrounded .cr>div,.mm_vrc .b_overlay .btn.bigrounded
.cr>div:hover{box-shadow:none;border-radius:0;margin:0;background-position:16px
9px;background-size:12px
22px;background-color:transparent;background-image:url(/rp/rKVnxf6wkbxI0DbA2Au3IVC5Sog.svg)}.mm_
vrc .b_overlay .btn.bigrounded .cr>div{opacity:.7}.mm_vrc .b_overlay .btn.bigrounded
.cr>div:hover{opacity:1}.mm_vrc h2
a{font-family:"Arial",Helvetica,Sans-Serif;font-style:normal;font-weight:500;color:#111}.mm_vrc
h2{display:inline-block;padding-bottom:16px}.mm_vrc>div{position:relative;padding-bottom:32px}.mm_vrc
.see_more{position:absolute;right:0;top:3px}.mm_vrc
.see_more>a{font-family:"Arial",Helvetica,Sans-Serif;font-style:normal;font-weight:normal;font-size:16px;li
ne-height:1.8px;color:#000}#vsb_more{padding:16px 0 4px 160px;color:#111}#vsb_vid_cat .mm_vrc h2
a::after{display:inline-block;margin-left:12px;content:"";background-image:url(/rp/rKVnxf6wkbxI0DbA2Au3
IVC5Sog.svg);background-size:7px 14px;width:7px;height:14px;opacity:.7}#vsb_vid_cat .mm_vrc h2
a:hover::after{opacity:1}.mm_vrc .mm_vrc_sub{display:inline-block;margin-left:24px}.mm_vrc
.b_hList{position:absolute;height:20px;top:3px;overflow:hidden}.mm_vrc
.b_hList>li{padding-right:24px;padding-bottom:0}.mm_vrc .b_hList a{font:normal 13px/20px
"Arial",Helvetica,Sans-Serif;color:#111}.mm_vrc .mc_vtvc_tot .mmsts
.mc_vtvc_meta{display:none}.b_slideexp{margin-bottom:20px;position:relative}.b_ans>.b_slideexp>.slide:la
st-child,.b_ans>.b_slideexp:last-child,.b_vPanel
.b_slideexp:last-child{margin-bottom:0;padding-bottom:0}.b_slidebar
.slide{display:inline-block;vertical-align:top}.b_slidebar .slide,.b_slideexp
.b_viewport{overflow:hidden}.b_slideexp
.b_viewport{margin:auto}.b_slidebar{white-space:nowrap}.b_slidebar
.slide{white-space:normal;position:relative}.b_cards .cico,.b_slidebar .slide
.cico{border-radius:0}.b_slidebar,.b_slidebar .slide{width:100%}.b_slidebar.anim{transition:margin-left .35s
cubic-bezier(.15,.85,.35,1)}.slide>.spinner{position:absolute;left:50%}.slide>.spinner>
ner{position:relative;left:-50%;width:40px;height:40px;background:url(/rp/OJWYLxkTdSOmE7-V53KpAdO

```

Working principle of photovoltaic panel inverter

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j-xY.gif) no-repeat;margin:40px auto
30px;z-index:1000}.slide_mask.hideSlideMask{visibility:hidden}.b_slidebar.b_autoslidingfade
.slide.slide_fading{opacity:1}.slide_mask,.b_slidebar.b_autoslidingfade .slide{transition:opacity .3s
linear}.slide_mask.slide_fading,.b_slidebar.b_autoslidingfade
.slide{opacity:0}.slide_mask{position:absolute;width:100%;height:100%;opacity:.7;top:0}.carousel_seemore{
text-align:center}.carousel_seemore.dark a{color:#fff}.b_slidebar.enable_selecting
.slide.selected::after,.b_slidebar.enable_selecting .slide:hover::after{box-shadow:inset 0 0 0 2px
#fff}.b_slidebar .slide.selected::after,.b_slidebar .slide:focus::after{box-shadow:inset 0 0 0 2px
#0099bc}.b_slidebar.enable_selecting .slide.selected::after,.b_slidebar.enable_selecting
.slide:hover::after,.b_slidebar .slide.selected::after,.b_slidebar
.slide:focus::after{content:"";height:100%;width:100%;position:absolute;left:0;top:0}.b_slideexp
.b_antiSideBleed{display:inline-block}.carousel_seemore>.b_moreLink.rndChev{vertical-align:middle;height
:92px;text-decoration-color:#444;display:inline-block}.carousel_seemore
.seeAll_txt{display:block;color:#444;line-height:17px}.carousel_seemore
.seeAll_chev{display:block;height:48px;padding-bottom:12px;margin-top:15px}html[dir="rtl"]
.carousel_seemore .seeAll_chev{transform:scaleX(-1)}.b_slideexp
.b_viewport.scrollbar{overflow-x:auto;-ms-overflow-style:none;scrollbar-width:none}.b_slideexp
.b_viewport.scrollbar::-webkit-scrollbar{display:none}.b_slideexp
.b_viewport{-webkit-overflow-scrolling:touch}.b_overlay
.btn.rounded{position:absolute;cursor:pointer;z-index:1;-moz-user-select:none;-khtml-user-select:none;-webki
t-user-select:none;-o-user-select:none;-ms-user-select:none;user-select:none}.b_overlay
.btn.rounded,.b_overlay .btn.rounded .bg,.b_overlay .btn.rounded .cr,.b_overlay .btn.rounded
.cr>div,.b_overlay .btn.rounded .vcac>div{border-radius:50%}.b_overlay .btn.rounded
.vcac{height:0}.b_overlay .btn.rounded{height:32px;width:32px;top:50%;margin-top:-16px}.b_overlay
.btn.rounded .bg,.b_overlay .btn.rounded:hover .bg{opacity:0}.b_overlay .btn.rtl.rounded
.cr{direction:ltr}.b_overlay .btn.hidden.rounded .cr,.b_overlay .btn.disabled.rounded
.cr{visibility:hidden}.b_overlay .btn.rounded .cr>div{border:1px solid #ecec;box-shadow:0 2px 3px 0
rgba(0,0,0,.1);height:30px;width:30px;overflow:hidden;background-image:none;background-color:#fff}.b_ov
erlay .btn.rounded .cr>div:hover{box-shadow:0 2px 4px 1px rgba(0,0,0,.14)}.b_overlay .btn.rounded
.cr>div:after{bottom:5px;background-color:#fff;transform-origin:-430px
0;display:inline-block;transform:scale(.5);position:relative}.b_overlay .btn.rounded
.cr>div:hover:after{transform-origin:-514px 0}.b_overlay .btn.ltr.rounded .cr>div:after{right:5px}.b_overlay
.btn.rtl.rounded .cr>div:after{left:5px}.b_overlay .btn.prev.ltr.rounded .cr,.b_overlay .btn.next.rtl.rounded
.cr{transform:scaleX(-1)}body .b_overlay .btn.rounded.next{right:-12px}body .b_overlay
.btn.rounded.prev{left:-13px}.ra_car_container .b_overlay .btn.prev.ltr.rounded .cr>div,.ra_car_container
.b_overlay .btn.next.rtl.rounded .cr>div{transform:unset}.ra_car_container .b_overlay .btn.rounded
.cr>div{background-position:0;border:unset}.ra_car_container .b_overlay .btn.rounded
.cr>div:after{content:unset}@media screen and (forced-colors:active){.b_overlay .btn.rounded.hidden
*,.b_overlay .btn.rounded.disabled *{background:none}.b_overlay .btn.rounded.hidden,.b_overlay
.btn.rounded.disabled{background:none}}.b_overlay .btn.rounded

```

Working principle of photovoltaic panel inverter

```
.cr>div:after{content:url(/rp/EX_mgILPdYtFnI-37m1pZn5YKII.png)}.b_overlay{position:relative}.vcac{position:absolute;width:100%;top:50%}.vcac>div{position:relative;width:100%}.vsb_tr_chd .mc_vtvc .mc_vtvc_meta { padding: 10px 10px 10px 10px; } .vsb_tr_chd .mc_vtvc .mc_vtvc_meta_w { height: 190px; margin-top: -0px; } .vsb_tr_chd .mc_vtvc .mc_vtvc_title { height: 150px; line-height: 15px; margin-bottom: 0px; margin-top: 0px; } .vsb_tr_chd .mc_vtvc .mc_vtvc_meta_block_area { height: 20px; } .vsb_tr_chd .mc_vtvc .vtmu, .vsb_tr_chd .mc_vtvc .vtpl { bottom: 198px; } .vsb_tr_chd .mc_vtvc_th_dock { height: 190px; } .vsb_tr_chd .mc_vtvc_th_dock { height: 60px; }.tr_bt .mc_vtvc_th_img{height:auto;width:100%}.grad_b{position:absolute;width:100%;top:30%;bottom:0%;background:linear-gradient(180deg,rgba(48,44,39,0) 0%,#302c27 100%)}.mc_vtvc_th_dock{width:100%;background:#302c27}.mc_vtvc_tot .mc_vtvc_th{background-color:transparent}.vsadc .grad_b{top:81.8%}.mc_vtvc_tot .mc_vtvc_meta{line-height:15px;position:absolute;bottom:0%;background:transparent}.mc_vtvc_tot .mc_vtvc_meta_row{line-height:16px;font-size:12px;height:16px}.mc_vtvc_tot .mc_vtvc_meta_row,.mc_vtvc_tot .mc_vtvc_meta_row a{color:#dadada}.mc_vtvc_tot .mc_vtvc_title,.mc_vtvc_tot .mc_vtvc_title a{color:#fff}.vsadc .mc_vtvc_tot .mc_vtvc_title{line-height:18px}.vsadc .mc_vtvc_tot .mc_vtvc_meta_row,.vsadc .mc_vtvc_tot .mc_vtvc_meta_row a{color:rgba(255,255,255,.7)}.vsadc .mc_vtvc_meta_pubdate{padding-bottom:2px}.vtdc_default{background:#302c27}.vtdc_default_g{background:linear-gradient(180deg,rgba(48,2,39,0) 0%,#302c27 100%)}.vtdc_black{background:#111}.vtdc_black_g{background:linear-gradient(180deg,rgba(17,17,17,0) 0%,#111 100%)}.vtdc_blue{background:#3a4e74}.vtdc_blue_g{background:linear-gradient(180deg,rgba(58,78,116,0) 0%,#3a4e74 100%)}.vtdc_brown{background:#69423d}.vtdc_brown_g{background:linear-gradient(180deg,rgba(105,66,61,0) 0%,#69423d 100%)}.vtdc_grey{background:#464646}.vtdc_grey_g{background:linear-gradient(180deg,rgba(70,70,70,0) 0%,#464646 100%)}.vtdc_green{background:#324f32}.vtdc_green_g{background:linear-gradient(180deg,rgba(50,79,50,0) 0%,#324f32 100%)}.vtdc_orange{background:#8c5400}.vtdc_orange_g{background:linear-gradient(180deg,rgba(140,84,0,0) 0%,#8c5400 100%)}.vtdc_pink{background:#a3394b}.vtdc_pink_g{background:linear-gradient(180deg,rgba(163,57,75,0) 0%,#a3394b 100%)}.vtdc_purple{background:#774077}.vtdc_purple_g{background:linear-gradient(180deg,rgba(119,64,119,0) 0%,#774077 100%)}.vtdc_red{background:#811515}.vtdc_red_g{background:linear-gradient(180deg,rgba(129,21,21,0) 0%,#811515 100%)}.vtdc_white{background:#464646}.vtdc_white_g{background:linear-gradient(180deg,rgba(70,70,70,0) 0%,#464646 100%)}.vtdc_yellow{background:#755b00}.vtdc_yellow_g{background:linear-gradient(180deg,rgba(117,91,
```


Working principle of photovoltaic panel inverter

```
.b_imgcap_altitle{line-height:22px}.b_imgcap_altitle{display:flex;flex-direction:row-reverse;gap:var(--mai-smtc-padding-card-default)}.b_imgcap_altitle
.b_imgcap_img{flex-shrink:0;display:flex;flex-direction:column}.b_imgcap_altitle
.b_imgcap_main{min-width:0;flex:1}.b_imgcap_altitle .b_imgcap_img>div,.b_imgcap_altitle .b_imgcap_img
a{display:flex}.b_imgcap_altitle .b_imgcap_img
img{border-radius:var(--mai-smtc-corner-card-default)}.b_imagePair.square_s>
ner{width:50px}.b_imagePair.square_s{padding-left:60px}.b_imagePair.square_s>
ner{margin:2px 0 0 -60px}.b_imagePair.square_s.reverse{padding-left:0;padding-right:60px}.b_imagePair.square_s.reverse>
ner{margin:2px -60px 0 0}.b_ci_image_overlay:hover{cursor:pointer}
sightsOverlay,#OverlayIFrame.b_mcOverlay
sightsOverlay{position:fixed;top:5%;left:5%;bottom:5%;right:5%;width:90%;height:90%;border:0;border-rad
ius:15px;margin:0;padding:0;overflow:hidden;z-index:9;display:none}#OverlayMask,#OverlayMask.b_mcOv
erlay{z-index:8;background-color:#000;opacity:.6;position:fixed;top:0;left:0;width:100%;height:100%}Solar
MagazineA Guide to Solar Inverters: How They Work & How ...When they do, a string of solar panels forms
a circuit where DC energy flows from each panel into a wiring harness that connects them all to a single ...
```

Web: <https://thehibiscuscoast.co.za>