



TemRack *iR*

An integrated remote racking device for Terasaki Tempower 2 air circuit breakers

*Minimise your risks,
maximise your safety.*



*Now there's a
much safer way!*

-  nhp.com.au | nhpnz.co.nz
-  1300 647 647 | 0800 647 647
-  sales@nhp.com.au | sales@nhp-nz.com

Remote racking - why?

Arc faults can cause significant damage to switchgear, conductors, switchboards and installations. However, the worst consequence can be the injury or death of operators in the area.

According to the hierarchy of control, isolation involves personnel being separated from the energised electrical equipment and conductors. It is most effective for personnel who do not have to operate or perform work on the electrical equipment.

The most likely time for an incident to occur in a switchroom is during electrical and mechanical operations, such as switching, isolation and racking of circuit breakers.

NHP's TemRack *iR* is an integrated, remote racking device, protecting personnel from hazardous conditions during switchgear operations, as they can be located away from the switchgear, minimising the risk of injury. This improved safety solution is especially important for sites which must maintain air circuit breakers (ACBs) and perform racking IN/OUT operations.

Protection functions

- Reduce risk of exposure to explosive arc fault events by locating personnel away from the switchgear
- Remote racking
- Remote isolation



NHP's TemRack *iR*

From live to fully isolated, without entering your switchroom

NHP's TemRack *iR* is a fully integrated, automated motorised racking device, which enables remote racking of the Terasaki TemPower 2 AR ACB body in and out of its associated carriage. The automated racking function permits safe isolation of the ACB with zero physical interaction between personnel and the ACB.

Separation of personnel and possible point of arc flash minimises the risk of exposure for operators and is becoming a common safety practice for racking procedures.

It features integrated digital I/O for control and feedback, allowing the operator to remotely open or close Terasaki ACBs and rack units in or out while located outside the switchroom. Remote control may be performed via a local control station or other remote methods utilising the integrated I/O.

TemPower2 ACBs may be equipped with open/close coils to allow remote switching. The racking drive can then move the ACB to any operating condition - connected, test or isolated.

Enable switch:

- LED illuminated selector switch
 - Activates the TemRack *iR* enable signal
 - Illuminated solid green when the ENABLE signal is active

Fault status indicator:

- LED illuminated indicator
 - Self-diagnostic check
 - In the event of a fault, the Fault indicator will illuminate and flash several times followed by a pause in the sequence. The number of flashes corresponds to the fault code and is used to diagnose the nature of the fault and assist in troubleshooting

Features and benefits:

Completely motorised with zero manual intervention

- Personnel can safely perform switchgear rack in/rack out operations outside of the arc flash boundary area

Zero physical interaction between personnel and the Terasaki ACB

- Reduce the risk of exposure to explosive arc fault events and high incident energy

Housed completely within the Terasaki ACB body with no protruding components

- Retrofittable on-site by NHP Service Technicians to existing TemPower 2 AR2, AR3 and AR4 ACB bodies
- Factory fit by NHP at the time of ACB manufacture and assembly
- Allows for easy maintenance away from live switchboards during routine ACB servicing

Integrated digital I/O for control and feedback

- Remote control operation via a NHP supplied Local Control Station (LCS)
- Remote control operation via the customer's automation system interfacing with the I/O

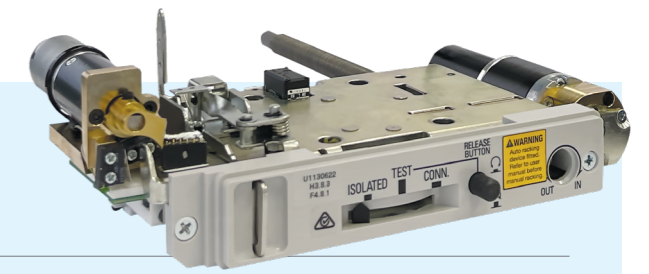
Easy control with intuitive design

- Self-test and on-board diagnostics with visual indication* showing operational status
- LEDs for ACB Status, Feedback and Control indication on the LCS or via integrated I/O
- Internal cycle counter to indicate number of racking operations completed

ACB functionality, interlocks and safety features are maintained

- The TemRack *iR*'s mechanical interlocks and safety functions integrate seamlessly with the ACB and the ACB's functionality remains unaffected
- Customer's electrical protection methodology/system on site remains unaffected

* Visual indication by means of LEDs on the LCS or via integrated I/O on the customer's automation system



iRRD control/status

- LED illuminated momentary pushbuttons
- Press pushbuttons to issue a racking command
 - Flashes while the racking process is in motion
 - Illuminated solid when the TemRack *iR* registers it is in the ISOLATE/TEST/CONNECT position

ACB position feedback

- LED illuminated indicators
 - Illuminated solid for when the ACB is in ISOLATE/TEST/CONNECT position

ACB control

- LED illuminated momentary pushbuttons
 - Press pushbuttons to issue a command to OPEN/ CLOSE the ACB (the ACB is required to have open/close coils fitted to perform this function)
 - Illuminated solid when ACB contacts are OPEN or CLOSED

LOCAL CONTROL STATION

TemRack iR technical data

Frame / model	Unit	Condition	AR2	AR3	AR4
Nominal voltage ratings					
Nominal operating voltage	(V)	dc	24	24	24
Absolute operating voltage range	(V)	dc	21 ... 27	23 ... 27	21 ... 27
Nominal current ratings					
Peak operating current	(A)	dc	2.50	5.00	4.20
Mechanical ratings					
Duty cycle ⁽¹⁾⁽²⁾	(Op / min)	@ 25°C	5 / 20	5 / 20	5 / 20
Ambient temperature	(°C)		-5 ... 50	-5 ... 50	-5 ... 50
Maintenance schedule ⁽³⁾ (number of operations)	(Op)		100	100	100
Operating modes moterised:					
Test → Connect			Yes	Yes	Yes
Isolate → Connect			Yes	Yes	Yes
Connect → Test			No	No	No
Test → Isolate			Yes	Yes	Yes
Connect → Isolate			Yes	Yes	Yes
Isolate → Remove			Yes	Yes	Yes
Manual					
All positions			Yes	Yes	Yes

(1) Duty cycle is defined as number of racking operations per time period. i.e., 5 / 20 = 5 operations per 20-minute period.

(2) One operation is a single racking operation between any two defined positions (e.g., rack from ISOLATE to CONNECT)

(3) Maintenance should be performed within the number of operations quoted, or at least once per 12-month period, whichever comes first.

NHP's Services and Solutions team

NHP's Services and Solutions team offers the installation of the TemRack iR as part of a new ACB build or via a retrofit service to AR2 ACBs

Thanks to the NHP Services and Solutions team, NHP can offer so much more than quality electrical and automation products.

By assisting you to identify the risks and opportunities that are prevalent in your industry or application, NHP can facilitate the required services and solutions to maximise your operational investment in accordance with your priorities and objectives.

NHP Services and Solutions is backed by our supply line partners, both locally and overseas, with genuine spare parts, technical support and training though to

on-site service and repairs.

Why choose NHP?

No matter how good a product may be, it is nothing without dedicated people to support that product. NHP is solely committed to servicing the needs of our customers. We bring together internationally recognised power distribution and automation products with local knowledge and expertise to deliver best practice services from concept design through to installation and after-sales service.



**NHP ELECTRICAL
ENGINEERING PRODUCTS**

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