AS 4777.2:2015 Inverter requirements

TASMANIAN OPERATIONAL PARAMETERS FOR MICRO-EMBEDDED GENERATING SYSTEMS &

TasNetworks Voltage Settings

TasNetworks
Delivering your power

TASNETWORKS POLICY REQUIREMENTS

1. All *embedded generating units*, **above 10 kW** rating, that connect to the LV supply must use a 3-phase connection, unless otherwise directed by TasNetworks.

2. All *embedded generating units* that connect to the LV supply with a high risk of generating over-voltages (as advised by TasNetworks) must use a 3-phase connection.

3. When sending active power into the network the **net** displacement power factor of all *embedded generating units* must have a constant value of **0.90 lagging** (i.e. var absorption) for all current outputs from 25 % to 100 % of rated current,

    Note: For *embedded generating unit* current outputs below 25 % of rated current, it is acceptable for the power factor to be tapered from 0.95 lagging towards 1.0 as the current output approaches zero.

4. All *embedded generating units* that connect to the LV supply must have overvoltage protection settings that are consistent with AS 61000.3.100-2011 or AS4777.2:2015 (section 7.5.2).

5. *Embedded generating units* must **not disconnect** from the distribution network, due to frequency disturbances, while the power system frequency remains **above 47.0 Hz** and **below 53.0 Hz**.

6. TasNetworks may alter any of these requirements at our request. This may occur during a network support event for instance.

TASNETWORKS POLICY REQUIREMENTS APPLICABLE TO AS4777.2:2015 PARAMETER SETTINGS

1. Frequency Limits (AS4777 Table 13) – TasNetworks require that the inverter's under frequency set-point is 47.0 Hz and the inverter's over frequency set-point is 53.0 Hz.
2. TasNetworks accept the default set-point for Vnom-max of 255 V (AS4777 section 7.5.2 a).
3. TasNetworks accept the default set-point for fstop of 52.0 Hz (AS4777 section 7.5.3.1).
4. Frequency Response - TasNetworks require that inverters with energy storage stop charging at 48.0 Hz (fstop-CH) (AS4777 section 7.5.3.2).

Summary of TasNetworks Protection Settings

Parameter	Threshold	Time delay (s)
(V<) under voltage trip	180 V_{rms}	2.0
Long-term over voltage trip	255 V_{rms} (average)	600.0
(V>) over voltage 1 trip	260 V_{rms}	2.0
(V>>) over voltage 2 trip	265 V_{rms}	0.2
Under frequency trip	47.0 Hz.	2.0
Over frequency trip	53.0 Hz.	0.2

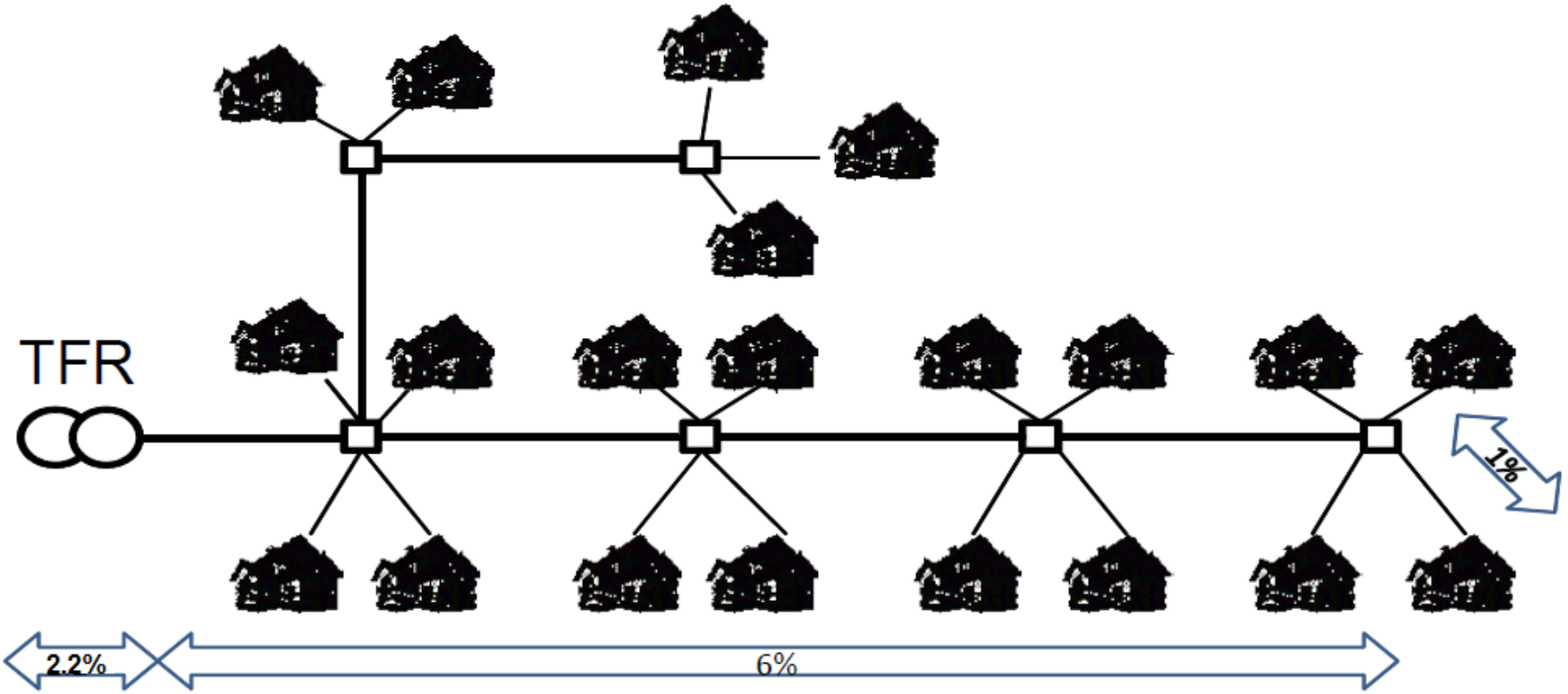
TasNetworks Supply Voltage Ranges

TasNetworks is pro-actively lowering the Target Voltage bands of its distribution transformers and will monitor LV circuits reported as being persistently > 248 V.

There are two “no load” voltages ranges:

- 238 V → 244 V for “shared” circuits
- 232 V → 238 V for direct connections

A transformer supplying a circuit run of connected installations

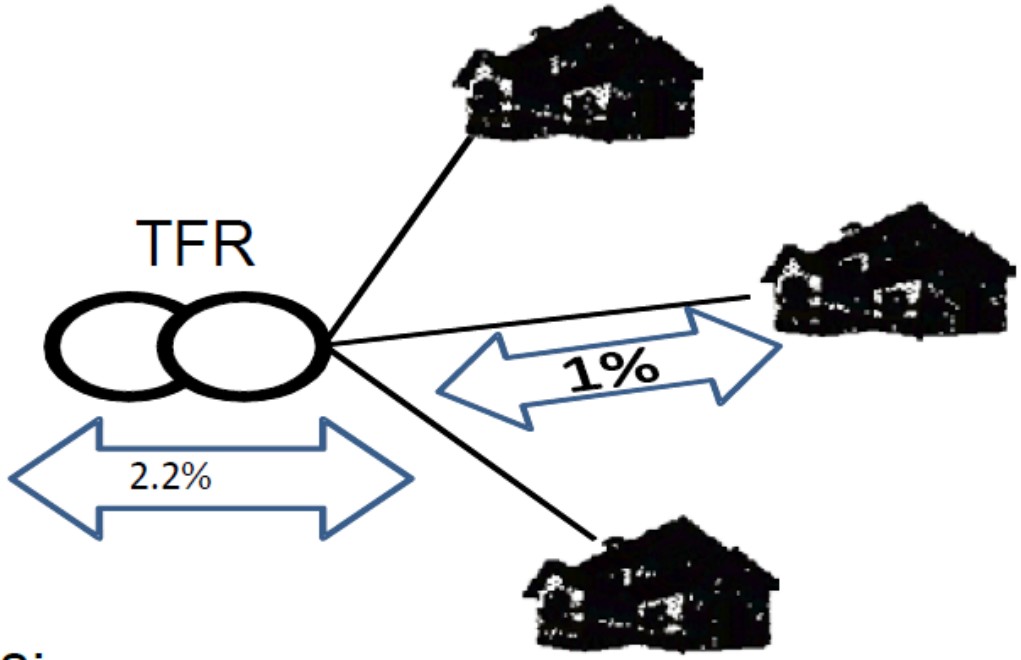


Required results:

V-Line N = 238 to 244 voltage output must be within that band

A transformer with customer installations directly connected (no circuit run)

Note: The following also applies to split phase and SWER transformers.



Required results:

V-Line N = 232-238 voltage output must be within that band.

Thankyou

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