Setting reverse power 32R pick-up value for VAMP 230/255/257/259

The relay will show the pick-up value in input kilowatts, but the setting is done in percent of the nominal apparent power $S_N$.

$$S_N = CT_{\text{Rated Primary}} \cdot VT_{\text{Rated Primary}} \cdot \sqrt{3}$$

**Example**

Let us say that the pick-up target value for reverse power stage $P< 32R$ is $-5\%$ of the rated active input power of the motor.

Motor data:

Rated current $I_{MOT} = 385$ A

Rated voltage $U_{MOT} = 6000$ V

Power factor $\cos \phi = 0.8$

Current and voltage transformers:

$CT = 400/5$

$VT = 6600/120$

First we calculate the nominal apparent power

$$S_N = 400 \cdot 6600 \cdot \sqrt{3} = 4572.6\text{kVA}$$

and then the rated active input power

$$P_{\text{Input}} = I_{MOT} \cdot U_{MOT} \cdot \sqrt{3} \cdot \cos \phi = 3200.8\text{kW}$$

The $-5\%$ pick-up setting will be in input kilowatts

$$P_{\text{Input,Reverse}} = -5\% \cdot P_{\text{Input}} = -0.05 \cdot 3200.8\text{kW} = -160.04\text{kW}.$$ 

The pick-up setting for the relay will be
Setting reverse power 32R pick-up value

\[
P_{\text{Setting}} = \frac{P_{\text{Input/Reverse}}}{S_n} = \frac{-160.04}{4572.6} = -0.035
\]

\[= -3.5\%.
\]