A set of molecular descriptors is developed for machine learning models that target thermodynamic and electronic properties of molecules. These features are evaluated by monitoring performance of kernel ridge regression models on well-studied data sets of small organic molecules. The features include connectivity counts, which require only the bonding pattern of the molecule, and encoded distances, which summarize distances between both bonded and non-bonded atoms and so require the full molecular geometry. Combining these two types of features leads to models whose performance is comparable to or better than the current state of the art. The features introduced here have the advantage of leading to a feature vector whose length is independent of molecular size, and of leading to models that may be trained on smaller molecules and then used on larger molecules with little degradation in performance.