The presence of large-amplitude internal waves in the Andaman Sea have been observed since 1965 but their temporal variability is yet to be understood. Therefore, in-situ observations from March 2017 to February 2018 are used to study the temporal variability and vertical structure of internal tides. The kinetic energy of semidiurnal internal tides dominates that of diurnal internal tides by a factor of 4. The internal tides at semidiurnal frequency are relatively stronger in summer and autumn, whereas at the diurnal frequency they are stronger during summer and winter. Density stratification seems to be playing a more significant role in controlling the temporal variability of internal tides when compared with the astronomical tides. Moreover, the stratification near the surface is controlled by salinity variations, whereas the temperature variations control the sub-surface stratification. This leads to the occurrence of a strong double pycnocline during autumn and winter. The first-mode semidiurnal internal tides are more significant in all the seasons except during autumn. The semidiurnal internal tides are more coherent than the diurnal internal tides. Strong background currents due to mesoscale eddies are observed during periods of high incoherent internal tides. Therefore, the variations in background stratification and currents due to the presence of mesoscale eddies could be causing incoherent internal tides in this region.