While the formalism of isolated horizons is known for some time, only quite recently the near horizon solution of Einstein's equations has been found in the Bondi-like coordinates by Krishnan in 2012. In this framework, the space-time is regarded as the characteristic initial value problem with the initial data given on the horizon and another null hypersurface. It is not clear, however, what initial data reproduce the simplest physically relevant black hole solution, namely that of Kerr–Newman which describes stationary, axisymmetric black hole with charge. Moreover, Krishnan's construction employs the non-twisting null geodesic congruence and the tetrad which is parallelly propagated along this congruence. While the existence of such tetrad can be easily established in general, its explicit form can be very difficult to find and, in fact it has not been provided for the Kerr–Newman metric. The goal of this thesis was to fill this gap and provide a full description of the Kerr–Newman metric in the framework of isolated horizons. In the theoretical part of the thesis we review the spinor and Newman–Penrose formalism, basic geometry of isolated horizons and then present our results. Thesis is complemented by several appendices.