A Collective Thomson Scattering (CTS) diagnostic is installed at Wendelstein 7-X for ion temperature measurements in the plasma core. The diagnostic utilizes 140 GHz gyrotrons usually used for electron cyclotron resonance heating (ECRH) as a source of probing radiation. The CTS diagnostic uses a quasi-optical transmission line covering a distance of over 40 m. The transmission line is shared between the ECRH system and the CTS diagnostic. Here we elaborate on the design, installation, and alignment of the CTS diagnostic and present the first measurements at Wendelstein 7-X.