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**New nonbinary sequences with ideal two-level
autocorrection function**

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Abstract We find new families of nonbinary sequences of period $p^n - 1$ with symbols from a finite field F_p for any $p \geq 3$. The sequences have two-level ideal autocorrelation functions and are generalizations of recently found ternary sequences with ideal autocorrelation. Difference sets with parameters $\left(\frac{p^n-1}{p-1}, \frac{p^{n-1}-1}{p-1}, \frac{p^{n-2}-1}{p-1}\right)$ can also be derived from these sequences in a natural way.