

# DIN EN 14154-4:2015-02 (E)

## Water meters - Part 4: Additional functionalities

---

<b>Contents</b>		<b>Page</b>
Foreword .....		4
Introduction .....		5
<b>1</b>	<b>Scope .....</b>	<b>6</b>
<b>2</b>	<b>Normative references .....</b>	<b>6</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>6</b>
<b>4</b>	<b>General requirements .....</b>	<b>7</b>
4.1	Types of additional functionality devices and requirements .....	7
4.2	Connection requirements .....	8
4.3	Environmental conditions .....	8
4.4	Security .....	9
4.4.1	General .....	9
4.4.2	Software, data and hardware security .....	9
4.4.3	Firmware upgrade of AFD .....	9
4.4.4	Software identification .....	9
4.5	Power supply .....	9
4.6	Data storage .....	10
4.7	Clock requirements .....	10
4.7.1	General .....	10
4.7.2	Clock synchronisation .....	10
4.7.3	Clock setting .....	10
4.8	Marking .....	10
4.8.1	Requirements .....	10
4.8.2	Test .....	11
4.9	Documentation .....	11
4.9.1	General .....	11
4.9.2	Declaration of conformity .....	11
4.9.3	Instruction manual .....	11
4.10	Display .....	12
4.10.1	General .....	12
4.10.2	Requirements .....	12
4.10.3	Test .....	12
4.11	Metrological influence .....	12
4.11.1	Requirement .....	12
4.11.2	Test .....	12
4.12	Input to AFD / Output from AFD .....	13
4.12.1	General .....	13
4.12.2	Requirement .....	13
4.12.3	Test .....	13
<b>5</b>	<b>Additional functionalities .....</b>	<b>13</b>
5.1	General .....	13
5.2	Use cases .....	13
5.2.1	Scheduled read .....	13
5.2.2	Pre-programmed reading date .....	14
5.2.3	On demand read .....	14
5.2.4	History of consumption .....	14
5.2.5	Background leak .....	14

5.2.6	Burst .....	15
5.2.7	Reverse flow .....	15
5.2.8	Zero flow .....	16
5.2.9	Tamper of AFD .....	16
5.2.10	Tamper of meter .....	16
5.2.11	Battery low .....	16
5.2.12	Presence of air .....	17
5.2.13	Access profiles .....	17
6	Environmental considerations .....	17
Annex B (informative) Smart Metering, overview, core functionalities and definitions .....		19
B.1	General .....	19
B.2	M2M Gateway .....	19
B.3	Clusters .....	20
B.4	Primary Use Cases .....	20
B.5	Secondary Use Cases .....	20
B.6	Primary Actors .....	20
B.7	Actors .....	20
B.8	Use Cases .....	20
Annex C (informative) References to EN 14154-1, EN 14154-2 and EN 14154-3 and EN ISO 4064-1, EN ISO 4064-2, EN ISO 4064-3, EN ISO 4064-4, EN ISO 4064-5 .....		21
Bibliography .....		23