

# ISO/TS 81346-101:2025-01 (E)

## Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations - Part 101: Modelling concepts, guidelines and requirements for power supply systems

---

<b>Contents</b>		<b>Page</b>
<b>Foreword</b>		<b>v</b>
<b>Introduction</b>		<b>vi</b>
<b>1</b>	<b>Scope</b>	<b>1</b>
<b>2</b>	<b>Normative references</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions</b>	<b>1</b>
<b>4</b>	<b>Abbreviated terms</b>	<b>2</b>
<b>5</b>	<b>Modelling principles</b>	<b>2</b>
5.1	Design for purpose	2
5.2	Receiver's ownership principle	3
5.3	Collector system principle	4
5.4	Classification according to inherent functionality	5
5.5	Immaterial instantiation	5
5.6	Parent system and sub-systems	5
5.7	Limited constituent systems	7
5.7.1	General	7
5.7.2	Lower limit	8
5.7.3	Upper limit	8
5.8	Modelling for the future	9
5.9	Preferred semantics	9
5.10	RDS implemented to multiple domains (RDS-PS and RDS-CW)	9
5.11	Use of the symbol "?"	11
5.12	Structuring guidelines	11
<b>6</b>	<b>Top node</b>	<b>12</b>
6.1	General	12
6.2	Top nodes identifying large systems (stations, plants and factories)	13
6.3	Other purpose top nodes — temporary structures	13
6.3.1	General	13
6.3.2	Orders and bills of materials	14
6.3.3	Modular tasks and views, temporary structures	14
6.4	Top nodes for cataloguing purposes	15
6.5	Other purpose top nodes — (%) type aspects top nodes	16
<b>7</b>	<b>Aspects</b>	<b>17</b>
7.1	Reference designation sets	17
7.1.1	General	17
7.1.2	Semantics	18
7.2	Functional aspect [=]	18
7.3	Type aspect [%]	20
7.4	Product aspect [-]	22
7.4.1	General	22
7.4.2	Assembly structure	22
7.4.3	Bill of material structures	24
7.5	Location aspect [+Host of installation]	25
7.6	Location aspect [++Site of installation]	25
7.6.1	General	25
7.6.2	Levels and floors	27

7.6.3	Syntax.....	29
7.7	Location-type aspect [%%].....	29
<b>8</b>	<b>System associations and relationship classification.....</b>	<b>30</b>
8.1	Implicit association of the hierarchical structure.....	30
8.2	RD-set.....	30
8.3	Relationship classification.....	31
8.4	Relationships between aspects.....	32
<b>9</b>	<b>Classification guidelines — Power supply systems.....</b>	<b>33</b>
9.1	Prime systems (main systems).....	33
9.1.1	General.....	33
9.1.2	Electric power transporting systems (B-systems).....	33
9.1.3	Supporting systems (D-systems).....	33
9.1.4	Managing systems (F-systems).....	33
9.2	Technical systems.....	34
9.2.1	General.....	34
9.2.2	Consecutive duplicated classes.....	34
9.2.3	AA-AE Structural support classes.....	36
9.2.4	Pumping systems (KE) or Liquid matter transport systems (JB).....	36
9.2.5	Electrical power supply (HD) or electrical energy storage system (QD).....	36
9.2.6	Electrical energy flow control system (KL) or electrical power distribution system (JE).....	37
9.2.7	Power system phases.....	37
9.3	Component systems.....	38
9.3.1	General.....	38
9.3.2	High voltage systems (WB?/WD?).....	38
9.3.3	QMA/QNA/RNA Valves.....	38
9.3.4	System phases.....	38
<b>10</b>	<b>Classification guideline — Construction works.....</b>	<b>38</b>
10.1	General.....	38
10.2	Structure identifier.....	38
<b>11</b>	<b>Examples.....</b>	<b>41</b>
11.1	Generator Excitation System.....	41
11.2	High pressure oil supply system.....	42
<b>12</b>	<b>Implementation guidelines.....</b>	<b>43</b>
12.1	A recommended aspect.....	43
12.2	Depth and structure complexity.....	44
12.3	One object performing multiple functions.....	45
12.3.1	Multiple functions and Single Source of Truth (SSOT) within one system.....	45
12.3.2	Strict singular product aspect occurrence.....	46
12.3.3	Digital Object Identifier (DOI).....	47
12.3.4	Preferred reference designations (PRD).....	48
12.4	Simplification/adaptation guideline.....	50
12.4.1	General.....	50
12.4.2	Function aspect for signal structuring.....	50
12.4.3	Omitting full stops “.” in between RDS levels.....	50
<b>Annex A (informative) Example of use — The circuit breaker.....</b>		<b>51</b>
<b>Annex B (informative) Example of use — Creation and evolution of an RD-set.....</b>		<b>53</b>
<b>Annex C (informative) Example of a class conversion table.....</b>		<b>59</b>
<b>Bibliography.....</b>		<b>137</b>